

FINDING A METHOD FOR THE MADNESS:  
A COMPARATIVE ANALYSIS OF STRATEGIC DESIGN METHODOLOGIES

BY  
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## APPROVAL

The undersigned certify that this thesis meets master's-level standards of research, argumentation, and expression.

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DAVID BENSON (Date)

## DISCLAIMER

The conclusions and opinions expressed in this document are those of the author. They do not reflect the official position of the US Government, Department of Defense, the United States Air Force, or Air University.



## ABOUT THE AUTHOR

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## ABSTRACT

The twenty-first century national security environment is complex, ill-defined, and fraught with unique challenges and actors. Maintaining U.S. advantage in this environment requires whole of government strategy, aligning the actions of all instruments and sources of power against a security threat. While existing policy espouses a whole of government approach, the U.S. government lacks a mechanism to develop a subsequent strategy. This paper posits strategic design to develop holistic, integrated strategy at the strategic-level. Using strategy and design theory, the work develops a comparative model for strategic design methodologies, focusing on the primary elements of vision, time, process, communication and collaboration, and risk assessment. My analysis dissects and compares three potential design methodologies including, net assessment, scenarios and strategic conversations, and the Multi-Domain Operational Strategist's Strategic Design Methodology highlighting their strengths and weaknesses within the model. The comparison concludes that the Multi-Domain Operational Strategist's Strategic Design Method is the most complete methodology of those assessed but also finds that the net assessment and scenarios and strategic conversations methodologies provide tools useful in strategy development.

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## Chapter 1

### Define the Problem and a Possible Solution

Converting policy preferences into strategic practice is a wicked problem. The U.S. national security environment is complex, uncertain, rapidly changing, and involves a multitude of actors. Many national security challenges require a whole of government approach, synchronizing the actions in all instruments of national power (IOP), to achieve U.S. advantage within a strategic competition. While the U.S. government communicates its whole of government intent via the *National Security Strategy*, it does not employ a process that develops, executes, and monitors holistic, action-oriented strategy.

Strategic design is one method to address the process gap that inhibits strategists' ability to develop integrated strategy at the national-level. This thesis compares three potential strategic design methodologies to identify which methodology best fills this gap. My research concludes that the Multi-Domain Strategist's Strategic Design Methodology (MDOS SDM) is the most complete strategic design methodology of the three I compare. However, the other two methodologies, net assessment and scenarios and strategic conversations, serve as useful tools for developing strategy at any level, despite not being a complete design methodology.

Chapter one uses the cumulative approach of describing the national security environment and examining national security strategy processes to define the problem that spurred this research project. The chapter then presents strategic design as an option for developing integrated strategy at the strategic-level. In chapter two, I will synthesize strategy and design literature to develop a comparative model for strategic design methodologies. Chapters three, four, and five describe and apply the comparative model to categorize the elements of three possible strategic design methodologies. Chapter six then compares the data collected from each methodology to highlight strengths and weaknesses within each of my model's comparative elements.

### **Isolating the Problem**

**The national security environment.** The first step in defining the problem that precipitated this research effort is to understand the United States' (U.S.) national security environment in the twenty-first century. In the fourth edition of *US National*

*Security: Policymakers, Processes, and Politics*, author Sam Sarkesian and his colleagues describe a complex global environment affected by many contradictory forces.<sup>1</sup> While Sarkesian speaks broadly about emerging security challenges and changes in the international environment, Dennis Drew and Donald Snow highlight three specific factors that have altered the twenty-first century's national security environment:

1. The impact of the end of the Cold War and September 11, 2001, attacks on the U.S.
2. The U.S. rise as the world's most powerful state in terms of economic, political, and military power.
3. The broadening of the content and nature of national security problems.<sup>2</sup>

Drew and Snow perceived these changes in the national security environment as significant enough to merit a new version of their 1988 book *Making Strategy: an Introduction to National Security Processes and Problems*. In their estimation, the “concrete parameters” strategists enjoyed during the Cold War have been replaced by “a much more diffuse, shifting, and controversial set of problems” that greatly complicate the strategy-making process.<sup>3</sup>

While it may be unsurprising that national security and strategy scholars agree that the present and future national security environments are complex and challenging, it is more surprising to see agreement across academic disciplines and experience bases. London School of Economics, Professor of Global Governance Dr. Mary Kaldor, presents what she calls ‘new wars’ as “wars in which the difference between internal and external is blurred; they are both global and local and they are different both from classic inter-state wars and classic civil wars.”<sup>4</sup> Kaldor asserts that new wars maintain the

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<sup>1</sup> Sam C. Sarkesian, John Allen Williams, and Stephen J. Cimbala, *US National Security: Policymakers, Processes, and Politics*, 4th ed (Boulder, CO: Lynne Rienner Publishers, 2008), 3.

<sup>2</sup> Dennis M. Drew and Donald M. Snow, *Making Twenty-First-Century Strategy: An Introduction to Modern National Security Processes and Problems* (Maxwell Air Force Base, AL: Air University Press, 2006), xii–xiv, <http://handle.dtic.mil/100.2/ADA459968>.

<sup>3</sup> Drew and Snow, *Making Twenty-First-Century Strategy*, xi.

<sup>4</sup> Mary Kaldor, *New & Old Wars: Organized Violence in a Global Era*, Third edition (Stanford, CA: Stanford University Press, 2012), vi.

political nature of old wars but “new wars involve a blurring of the distinctions between war..., organized crime..., and large-scale violations of human rights.”<sup>5</sup>

The security challenges she describes blur traditional state and international lines, the types of violence used, and the actors perpetrating the violence based on identity rather than state motivation, signaling dramatically increased complexity within which strategists must develop responses. Kaldor deemphasizes the role of states in favor of international law that “comprises both the ‘laws of war’ and human rights laws...and it would put an emphasis various forms of transnational justice,” In addition, she provides a prescription states can follow by including “political, military, and economic components” in their strategies to combat new wars.<sup>6</sup> Arguably, the U.S. complied with this prescription in the 2015 United States *National Security Strategy* by calling for a “Whole of Community approach, bringing together all elements of our society—individuals, local communities, the private and non-profit sectors, faith-based organizations, and all levels of government.”<sup>7</sup> Kaldor’s argument cages complex and ill-defined international challenges and advocates for a broad spectrum approach to combat it, similar to the U.S. government’s call for a whole of government approach to solving similar problems. Scholars have also applied similar concepts to conflicts below the state-level, highlighting that twenty-first century security challenges may occur at the city-level.

Strategist and counterinsurgency expert David Kilcullen argues that global urbanization is changing the character of conflict in the twenty-first century by moving “nonstate armed groups, or irregular actors, and state and nonstate groups using irregular methods” into cities.<sup>8</sup> Kilcullen further observes that future conflict will adopt a hybrid character that does not neatly divide into today’s categories, “state versus nonstate, domestic versus foreign, war versus crime.”<sup>9</sup> Kilcullen’s prescription focuses on the city-level but parallels Kaldor’s whole of community approach in calling for civil government

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<sup>5</sup> Kaldor, *New & Old Wars*, 2.

<sup>6</sup> Kaldor, *New & Old Wars*, 12.

<sup>7</sup> Office of the President, “National Security Strategy 2015,” *National Security Strategy Archive*, February 10, 2015, 8, <http://nssarchive.us/national-security-strategy-2015/>.

<sup>8</sup> David Kilcullen, *Out of the Mountains: The Coming Age of the Urban Guerrilla* (Oxford ; New York, NY: Oxford University Press, 2013), 103–4.

<sup>9</sup> Kilcullen, *Out of the Mountains*, 105.

focusing on social services, city administration, the rule of law, and infrastructure investment in cities and rural areas. Kilcullen further calls for minimizing reliance on traditional military capabilities to establish security to avoid military urbanicide.<sup>10</sup> In a related assessment that twenty-first century conflict will be unlike conventional wars of the past, author Sam Tangredi observes that U.S. opponents, including Russia, China, and nonstate actors learned from the U.S. Operation Desert Storm and are unlikely to choose conventional state on state conflict to achieve their international political aims.<sup>11</sup>

The U.S. Army War College provides a succinct summation of the previous forecasts of the twenty-first century's national security environment using the acronym VUCA. They define VUCA as "a world order where the threats are both diffuse and uncertain, where conflict is inherent yet unpredictable, and where our capability to defend and promote our national interests may be restricted by material and personnel resource constraints. In short, an environment marked by volatility, uncertainty, complexity, and ambiguity (VUCA)."<sup>12</sup> Army War College Professor of National Security Policy Harry S. Yarger observes that, because of the strategic environment's VUCA nature, that the situation is "difficult to grasp and is perhaps the most challenging task of strategic thinking."<sup>13</sup>

Despite this emergent complexity, which likely necessitates responses that leverage multiple instruments of national power across the government and private sectors, the U.S. has developed an overreliance on the military instrument of power. Columbia University professor Richard K. Betts observed in "Is Strategy an Illusion?" that "politicians often conflate strategy with policy objectives (focusing on what the desired outcome should be, simply assuming that force will move the adversary toward it)..."<sup>14</sup> In effect, Betts is identifying the U.S. government's inability to assess and

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<sup>10</sup> Kilcullen, *Out of the Mountains*, 108–9, 112.

<sup>11</sup> Sam J. Tangredi, *Anti-Access Warfare: Countering A2/AD Strategies* (Annapolis, MD: Naval Institute Press, 2013), 29.

<sup>12</sup> Magee, Strategic Leadership Primer, as quoted in Harry R. Yarger, *Strategy and the National Security Professional: Strategic Thinking and Strategy Formulation in the 21st Century* (Westport, CT: Praeger Security International, 2008), 28.

<sup>13</sup> Yarger, *Strategy and the National Security Professional*, 28.

<sup>14</sup> Richard K. Betts, "Is Strategy an Illusion?," *International Security* 25, no. 2 (2000): 7.

integrate the effects of the ways and means available to it in the pursuit of policy objectives in favor of an assumption about the universal efficacy of force.

In her contribution to the U.S. Army's advancing strategic thought series, author and scholar Tami Davis Biddle sharpens Betts' assertion. She writes that the U.S government reaches too readily for its military instrument, stating that "as a preferred instrument because they (policymakers) assume that force will have the desired effect on the enemy, even when those aims cannot possibly be achieved by military arms alone."<sup>15</sup> In his book *War from the Ground Up*, author Emile Simpson describes this phenomenon as armed politics. He observed that "the general tendency is a movement away from situations in which the armed forces set military conditions for a political solution: in many contemporary conflicts, while the of armed forces often remains crucial to achieving a political result, military activity is not clearly distinguishable from political activity."<sup>16</sup>

This brief survey of academic works from a range of disciplines and perspectives highlights that the U.S. twenty-first century national security environment will be fraught with complexity. Challenges are likely to arise from both state and non-state actors, employing unconventional techniques short of conventional war to achieve their international aims. Conflicts will blur traditional state lines, either occurring at the sub-state or international level, creating additional challenges for strategists. An overreliance on the military instrument of power that, as Kaldor and Kilcullen note, is not likely to single-handedly solve a problem and further complicates the national security situation. Perhaps U.S. Army War College Professor Harry Yarger best summarizes this section by saying that "National security is about much more than the use of the military and requires the development and application of all the nation's elements of power."<sup>17</sup> This section continues by surveying current U.S. national security strategy processes toward the goal of highlighting a gap in what the twenty-first century context requires of national security strategy and what current processes create.

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<sup>15</sup> Tami Davis Biddle, "Strategy and Grand Strategy: What Students and Practitioners Need to Know," 44, accessed October 12, 2016, <http://www.strategicstudiesinstitute.army.mil/pubs/display.cfm?pubID=1305>.

<sup>16</sup> Emile Simpson, *War from the Ground up: Twenty-First Century Combat as Politics* (Oxford ; New York, NY: Oxford University Press, 2013), 11.

<sup>17</sup> Yarger, *Strategy and the National Security Professional*, 4.

## National security strategy processes and challenges

Having established that the U.S. national security environment is complex and that appropriate strategies to address complex problems will likely require integration across agencies and instruments of national power, this section continues by exploring the processes used to develop national security strategy. First, it surveys published methods for developing national security-related strategies and the U.S. *National Security Strategy*. To avoid confusion between the document and subordinate strategies, I refer to the *National Security Strategy* document as the NSS and general strategies as national security strategy(ies). Second, this section explores observed realities for creating the NSS.

National security strategy represents a “nation’s plan for the coordinated use of all the instruments of state power—nonmilitary and military—to pursue objectives that defend and advance its national interests.<sup>18</sup> Drew and Snow provide the most basic explanation of the national security strategy development process, outlined below. While their process focuses on the breadth of strategy as it applies to the military instrument, one could easily extend steps four and five to include agencies supporting other instruments of national power.

1. “Define national security objectives that form the foundation of the strategy process.”
2. “Determine which instruments of national power are necessary to achieve the objectives and how those instruments are to be used.”
3. “Different agencies then create individual strategies that support the overall strategy.”
4. Develop narrower and more specific strategies that support a national security objective within a theater (e.g. operational strategy).
5. “Formulate and execute” tactics that enact the strategy created in step four.<sup>19</sup>

In its *Guide to National Security Issues, Volume II: National Security Policy and Strategy*, the U.S. Army War College provides the following framework for developing national security strategy across all levels from the NSS to theater military strategy.

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<sup>18</sup> *International Military and Defense Encyclopedia*, s.v. “national security strategy.”

<sup>19</sup> Drew and Snow, *Making Twenty-First-Century Strategy*, 14, 17, 19, 24.

They stress that strategists “must be able to develop strategies employing all of the instruments of power” and that “the formulation of strategy at any level employs the strategic thought process on the balancing of Ends, Ways, and Means.”<sup>20</sup> The guide defines ends as the objectives, means as available resources, and ways as how strategists employ resources.<sup>21</sup>

1. Identify U.S. interests
2. Determine level of intensity for each interest
3. Evaluate the issues, trends, and challenges (threats and opportunities) in regard to interests
4. Determine objectives (ends)
5. Consider alternative concepts (ways) that utilize available or needed resources (means) to achieve objectives
6. Determine the feasibility, acceptability, and suitability of the strategic options
7. Conduct risk assessment
8. Present policy recommendations<sup>22</sup>

Drew and Snow and the Army War College guide give logical processes for strategists at any level, including those crafting state-level guiding documents, can use to create informed and well-coordinated strategy. Naval Postgraduate School professor Richard B. Doyle provides an overview of the “interagency process” that the National Security Council (NSC) employs to reconcile the multitude of “interests, outlooks, and capabilities” among the agencies affected by the NSS.<sup>23</sup> Doyle notes that “There are no rules telling the NSC exactly how this is to be done...Each administration decides for itself how to employ the NSC to produce an NSS depending on the preferences of

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<sup>20</sup> J. Boone Bartholomees, “U.S. Army War College Guide to National Security Issues,” 415, accessed December 1, 2016, <http://strategicstudiesinstitute.army.mil/pdffiles/PUB1110.pdf>.

<sup>21</sup> Bartholomees, “U.S. Army War College Guide to National Security Issues,” 417.

<sup>22</sup> Bartholomees, “U.S. Army War College Guide to National Security Issues,” 415.

<sup>23</sup> Richard B. Doyle, “The U.S. National Security Strategy: Policy, Process, Problems,” *Public Administration Review*; Washington 67, no. 4 (August 2007): 626.

presidents and their national security advisors.”<sup>24</sup> It is clear in his process below that he recognizes that the particular committees and sub-committees that participate in the process detailed below change from administration to administration.<sup>25</sup>

1. “The Policy Coordination Committees...are interagency working groups,” comprised of senior officials and subject matter experts who “assist the NSC in generating consensus, as well as suggesting the outlines for portions of the NSS.”
2. Deputies and undersecretaries for the Deputies Committee which “direct interagency working groups to ensure that issues of importance are adequately reviewed before drafts are presented to the next level up in a sequence of decision-making events.”
3. The Principals Committee, comprised of senior members like the secretaries of state, defense, and treasury, provides “final and authoritative review.”

Doyle’s synopsis of the interagency committee process usually employed to craft the NSS does not provide any insight into whether the committees apply either strategy development method discussed previously. In concluding his assessment of the 2002, 2006, and 2010 U.S. NSS development processes, Dr. Graham Stolberg amplifies Doyle’s point by highlighting that “there was no identified specifically committed working group that involved more than one department or agency. The document was always written in utmost secrecy, with only a handful of senior personnel involved.” However, like Doyle, Stolberg does not detail what strategy processes the NSC or participating committees employed to develop the NSS content.<sup>26</sup> In light of this seemingly haphazard approach to developing the U.S. NSS, it becomes difficult to avoid seeing Eliot Cohen’s point in saying “that this task is so hard to perform in the maelstrom of day-to-day events that the entire notion of grand strategy might be in doubt. The best one might aim for, instead, is a kind of enlightened and informed muddling through.”<sup>27</sup>

The processes that Doyle and Stolberg describe do not clearly signal the crafting of a whole of government strategy, given variety in participants and levels of secrecy that

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<sup>24</sup> Doyle, “The U.S. National Security Strategy,” 626.

<sup>25</sup> Doyle, “The U.S. National Security Strategy,” 626.

<sup>26</sup> Alan G. Stolberg, “How Nation-States Craft National Security Strategy Documents,” 101, accessed October 12, 2016, <http://www.strategicstudiesinstitute.army.mil/pubs/display.cfm?pubID=1128>.

<sup>27</sup> Cohen as quoted in Biddle, “Strategy and Grand Strategy: What Students and Practitioners Need to Know,” 38.

NSAs employ. This is, to an extent, disconcerting in consideration of Stolberg’s observation that “The NSS is the only complete whole-of-government national security document that the U.S. Government publishes. All other national security related strategies, like the NDS or the National Strategy for Homeland Security are broad in scope, and do cut across various levels and sectors of government, but are still narrower than the NSS in terms of their focus on the needs of the national security problem that the specific strategy is charged with providing guidance for.”<sup>28</sup> Stolberg further highlights that most subordinate strategy documents are created solely within their owning organization, e.g., the Department of Defense for the National Defense Strategy.<sup>29</sup>

In fairness to the NSS, however, it is in many ways more a policy document, or what Doyle calls “declaratory policy,” than it is a document that defines actual strategy.<sup>30</sup> Stolberg highlights the multiple purposes that the NSS serves; his list notably misses providing grand strategy for the United States.

1. To convey executive branch guidance on foreign and defense policies.
2. To provide the President’s national security-related strategic guidance or vision to Congress to substantiate financial resources.
3. To communicate the vision to various foreign and domestic audiences so that they understand the administration’s intentions in the national security arena.
4. To address specific domestic audiences.
5. To assist in the establishment of a President’s national security agenda in the public domain.<sup>31</sup>

He asserts that the U.S. NSS “is to be considered a ‘public strategy document,’ one that can create a list of national interests and ‘desirable goals,’ but will not contain the detailed ways and means needed for an executable strategy.”<sup>32</sup> Richard Rumelt would certainly agree that the NSS is not “good” strategy because it lacks details on coherent actions. In his third element or “kernel” that makes up good strategy, Rumelt

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<sup>28</sup> Stolberg, “How Nation-States Craft National Security Strategy Documents,” 73.

<sup>29</sup> Stolberg, “How Nation-States Craft National Security Strategy Documents,” 78.

<sup>30</sup> Doyle, “The U.S. National Security Strategy,” 626, 628.

<sup>31</sup> Stolberg, “How Nation-States Craft National Security Strategy Documents,” 71–72.

<sup>32</sup> Stolberg, “How Nation-States Craft National Security Strategy Documents,” 72.

defines coherent actions as “feasible coordinated policies, resource commitments, and actions designed to carry out the guiding policy.”<sup>33</sup>

### **Problem identification**

The information mentioned above highlights several points that are foundational to this research effort. First, existing strategy processes are linear and do not inspire the creative thinking and synergy required to achieve an executable whole of government strategy. Second, despite assertions that the NSS is our only whole of government document, we should not view it as strategy because it lacks focus and detail, particularly with resource allocation and specific actions. Third, in synthesizing the previous two points, to attain synchronized and integrated operations below the NSS-level, the U.S. needs to embrace a strategy-development method that moves the components grand strategy to lower levels of strategy development.

Gregory D. Foster emphasizes this point: “Strategy in the modern era can only be thought of meaningfully as grand strategy—the coordinated packaging and use of all the instruments of power, military and nonmilitary, at the disposal of a nation or an alliance to attain prescribed objectives. No longer can we afford to maintain artificial conceptual demarcations between seemingly discrete domains of strategy—military, political, diplomatic, economic, technological, psychological, and the like—that manifest themselves operationally as costly bureaucratic and institutional barriers to unity of action.”<sup>34</sup> Foster’s assertion is, however, not unique to the present.

Beatrice Heuser identifies that the notion of all strategy being grand strategy has existed since 1943. She quotes scholar Edward Mead Earle, “But as war and society have become more complicated—and war...is an inherent part of society—strategy has of necessity required increasing consideration of nonmilitary factors, economic, psychological, moral, political, and technological. Strategy, therefore, is not merely a concept of wartime, but is an inherent element of statecraft at all times...In the present-

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<sup>33</sup> Richard P. Rumelt, *Good Strategy, Bad Strategy: The Difference and Why It Matters*, 1st ed (New York, NY: Crown Business, 2011), 7.

<sup>34</sup> Foster in James C. Gaston, *Grand Strategy and the Decisionmaking Process* (Washington, D.C.: National Defense University Press, 1992), 72.

day world, then, strategy is the art of controlling and utilizing the resources of a nation—or coalition of nations—including its armed forces, to the end that its vital interests shall be effectively promoted and secured against enemies, actual, potential, or merely presumed.”<sup>35</sup>

Grand strategy has a variety of definitions. B.H. Liddell Hart explains, “the role of grand strategy—higher strategy—is to coordinate and direct all the resources of a nation, or band of nations, towards the attainment of the political object of the war—the goal defined by fundamental policy.<sup>36</sup> Colin Gray defines grand strategy as “the direction and use made of any or all of the assets of a security community, including its military instrument, for the purposes of policy as decided by politics.”<sup>37</sup> Tami Davis Biddle says, “grand strategy identifies and articulates a given political actor’s security objectives at a particular point in time and describes how they will be achieved using a combination of instruments of power—including military, diplomatic, and economic interests.”<sup>38</sup> Yarger succinctly observes that “the term Grand Strategy encompasses both level and kind, implying an overarching strategy that integrates the use of all the state’s power in service of all the state’s interests.”<sup>39</sup>

There is some disparity as to where grand strategy falls within the hierarchical strategy structure. Drew and Snow present their understanding of the hierarchy, focusing specifically on the military IOP, as national security objectives, grand strategy, military strategy, operational strategy, and battlefield strategy.<sup>40</sup> Gray subordinates grand strategy to vision or policy and then continues his hierarchy with military strategy, operations, and tactics.<sup>41</sup> Liddell Hart presents a narrower view of the strategy hierarchy, again focused on the military IOP, as policy, grand (higher) strategy, and military strategy.<sup>42</sup> Yarger uses the Joint Publication 1-02, Department of Defense *Dictionary of Military and*

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<sup>35</sup> Beatrice Heuser, *The Evolution of Strategy: Thinking War from Antiquity to the Present* (Cambridge, UK: Cambridge University Press, 2010), 25–26.

<sup>36</sup> Basil Henry Liddell Hart, *Strategy*, 2nd rev. ed (New York, NY: Meridian, 1991), 322.

<sup>37</sup> Colin S. Gray, *The Strategy Bridge: Theory for Practice* (New York, NY: Oxford University Press, 2010), 3.

<sup>38</sup> Biddle, “Strategy and Grand Strategy: What Students and Practitioners Need to Know,” 5.

<sup>39</sup> Yarger, *Strategy and the National Security Professional*, 117–18.

<sup>40</sup> Drew and Snow, *Making Twenty-First-Century Strategy*, 13–27.

<sup>41</sup> Gray, *The Strategy Bridge*, 21.

<sup>42</sup> Liddell Hart, *Strategy*, 322.

*Associated Terms*, definition of grand strategy, “an overarching strategy summarizing the national vision for developing, applying and coordinating all the instruments of national power in order to accomplish the grand strategic objectives of: preserve national security; bolster national economic prosperity; and promote national values,” placing grand strategy in the top of strategy’s hierarchy followed by national security strategy, national military strategy, and theater strategy.<sup>43</sup>

That grand strategy, as a level of strategy, ranks high in the strategy hierarchy is not the issue. That subordinate strategies do not include the kind that integrates all IOP of grand strategy is an issue. The problem then is that the U.S. does not have an effective mechanism to translate grand strategy and strategic-level guidance into a strategy that integrates all its IOP. That problem statement spurred this research project to explore one option for providing a strategy development mechanism that can creatively and synergistically respond to twenty-first century complexity below the grand strategic or national security strategy levels.

### **Strategic Design as a Possible Solution**

My interest in investigating strategic design as a possible solution to the problem identified above stems from my academic experience with operational design at the U.S. Air Force’s Air Command and Staff College. This section explains operational design’s purpose and logic and draws connections between them to what I envision for strategic design as a resolution to the problem statement discussed in the previous text.

### **Design**

In 2009, U.S. Joint Forces Command Commander, General James Mattis put his weight behind service-level initiatives to apply design concepts to military operations. He did so in response to observations and forecasts that “today’s operational environment challenges us even more with increasingly complex geopolitical circumstances, the emergence of non-state actors, rapid technology change, and our inability to accurately forecast how threats will emerge and what form they will take.”<sup>44</sup> His description of the operational environment nests perfectly with the ways that Drew and Snow, Kaldor, Kilcullen, Tangredi, and Yarger characterize the strategic environment. General Mattis

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<sup>43</sup> Yarger, *Strategy and the National Security Professional*, 21–22.

<sup>44</sup> James N. Mattis, “Memorandum for U.S. Joint Forces Command, Subject: Vision for a Joint Approach to Operational Design.”, October 6, 2009.

noted a trend toward mechanization of the planning process, focusing on a checklist mentality rather than applying critical and creative thinking to the problem, which did not foster the ingenuity required to respond to the environment he observed successfully.<sup>45</sup> The goal, or purpose, of operational design then, is “to make sense of a complex environment, to aid in identifying and understanding problems in that environment, and to develop an approach that addresses those problems.”<sup>46</sup>

The U.S. Army’s School of Advanced Military Studies (SAMS) devotes significant time and effort in their student text, *The Art of Design v.2*, explaining the logic that connects design to military operations and, by implication, strategy across all levels of war. Colonel Stefan J. Banach, a former SAMS director and pioneer of military design thinking, observes that “for design to be useful in the military domain, it must complement and interact with existing planning doctrine.”<sup>47</sup> *Art of Design* delineates this complementary character in the products of design and planning, “Whereas designing produces a solution that informs the commander’s intent, planning compares multiple courses of action that provide a possible sequence of activities to accomplish the mission.”<sup>48</sup> This connection between design and planning is significant because insightful, holistic intent derived from a thorough and creative understanding of the problem enables more effective planning to accomplish the commander’s desired end state.

SAMS describes the logic of military planning as “rational, rigorous, reductive, and repeatable” whereas design’s logic is “critical, creative, continuous, and circular.”<sup>49</sup> Designers advance toward understanding through iterative and adaptive views, referred to as framing, reframing, and reflective thinking, of the relationships between the problem

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<sup>45</sup> Mattis, “Memorandum for U.S. Joint Forces Command, Subject: Vision for a Joint Approach to Operational Design.”

<sup>46</sup> Joint Warfighting Center, “Pamphlet 10, Design in Military Operations: A Primer for Joint Warfighters” (U.S. Joint Forces Command, September 20, 2010), <http://www.dtic.mil/doctrine/doctrine/jwfc/jwfcpam10.pdf>.

<sup>47</sup> Stefan J. Banach and Alex Ryan, “THE ART OF DESIGN: A Design Methodology,” *Military Review* 89, no. 2 (April 2009): 106.

<sup>48</sup> School of Advanced Military Studies, *Art of Design: Student Version 2.0* (Department of the Army, School of Advanced Military Studies, 2010), 10.

<sup>49</sup> School of Advanced Military Studies, *Art of Design: Student Version 2.0*, 13, 15.

and possible solutions.<sup>50</sup> Donald Schön observes, “designing in its broader sense involves complexity and synthesis. In contrast to analysts or critics, designers put things together and bring new things into being, dealing in the process with many variables and constraints, some initially known and some discovered through designing.”<sup>51</sup> Banach and Ryan note that “Design is a non-linear, interactive, and continuous cognitive activity” that *Art of Design* observes “permits questioning of the mission, the thinking that got us to where we are now, and even whether any action is actually required. By exposing goals, aims, and objectives to collaborative dialog, design improves the likelihood of effective action towards solving the right problem.”<sup>52</sup>

### **Strategic design**

Strategic design, as envisioned in this project, occurs at the strategic-level and focuses on integrating all of the instruments of power to establish policy or respond to a national security problem.<sup>53</sup> It provides “a methodology for applying critical and creative thinking to understand, visualize, and describe complex, ill-structured problems and develop approaches to solve them,” meaning that strategic design maintains a similar purpose and logic of operational design.<sup>54</sup> The strategic design methodologies explored in this work provide a framework for how the interagency committees that Doyle describes formulate responses to specific strategic challenges.

The strategic design process and its output, a vision or concept of action, directly addresses one of Biddle’s central warnings, “That coherence (in grand strategy) must emerge from a domestic interagency process that has its own competitive dynamics and serious challenges of communication flow.” Biddle continues to explain that all parties

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<sup>50</sup> School of Advanced Military Studies, *Art of Design: Student Version 2.0*, 14–16; Banach and Ryan, “THE ART OF DESIGN,” 107–8.

<sup>51</sup> Donald A. Schön, *Educating the Reflective Practitioner: Toward a New Design for Teaching and Learning in the Professions*, 1. ed, The Jossey-Bass Higher Education Series (San Francisco, CA: Jossey-Bass, 1987), 41–42.

<sup>52</sup> Banach and Ryan, “THE ART OF DESIGN,” 108; School of Advanced Military Studies, *Art of Design: Student Version 2.0*, 18–19.

<sup>53</sup> Joint Publication 1-02 *Department of Defense Dictionary of Military and Associated Terms*, 8 November 2010, defines the strategic level of war as “The level of war at which a nation, often as a member of a group of nations, determines national or multinational (alliance or coalition) strategic security objectives and guidance, then develops and uses national resources to achieve those objectives.”

<sup>54</sup> Department of the Army, *Field Manual 5-0, The Operations Process* (Washington, D.C.: Headquarters, Department of the Army, 2010), 3–1, <https://fas.org/irp/doddir/army/fm5-0.pdf>.

responsible for developing, executing, and monitoring a strategy must remain in continuous communication to keep the strategy on course over time.<sup>55</sup> Design offers a method to develop a unified vision that transcends agency-specific interests that can overtake policy and strategic guidance processes because the design team will be able to frame and reframe the problem across each interest to identify best outcomes and pitfalls.

As Nigel Cross observes, “designers produce novel, unexpected solutions; tolerate uncertainty, working with incomplete information; apply imagination and constructive forethought to practical problems; and use drawings and other modeling media as means of problem solving.” Design thinking, with its collaborative, iterative, and creative character seems uniquely suited to create a holistic vision that synthesizes all the instruments of power in addressing a problem. Banach and Ryan’s assertion that design must seamlessly interact with planning also holds true for strategic design, as the concepts that emerge from the strategic design process must then be subject to detailed planning by executing agencies. However, the results of individual planning are more likely to maintain the synergistic intent of the design concept, avoiding Drew and Snow’s observation that “without coordination, the instruments of power can work at cross-purposes,” because planning would begin with shared understanding of the problem and a holistic vision of the solution.<sup>56</sup> Strategic design provides an effective mechanism to move the “kind” of grand strategy, integrating all of the instruments of power into a single strategy, below the “level” of grand strategy.<sup>57</sup>

Chapter one has defined both the problem and the proposed solution that lie at the heart of my research effort. Chapter two continues by using strategy and design literature to build a model that will compare three design methodologies.

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<sup>55</sup> Biddle, “Strategy and Grand Strategy: What Students and Practitioners Need to Know,” 39.

<sup>56</sup> Drew and Snow, *Making Twenty-First-Century Strategy*, 17.

<sup>57</sup> Yarger, *Strategy and the National Security Professional*, 117–18.

## Chapter 2

### Toward a Comparative Model

The United States government's existing national security strategy documents are effective strategic communications tools for security policy but do not translate that policy into holistic and executable strategy. Chapter one introduced strategic design to develop this bridge between national security policy and effective strategy. This chapter synthesizes strategy and design literature to deduce the elements of a comparative model for strategic design methodologies which center around vision, time horizons and continuance, the methodology's process, the methodology's methods for communication and collaboration, and risk assessment.

#### Vision

Strategic design interplays with vision in two ways. First, the nation's broad strategic vision (BSV) serves as a foundational guiding component of the design. National purpose, national interests, and the policies that those create inform national strategic vision. Second, the design should produce a specific vision (SV) in response to a national security problem or challenge. This vision should be holistic, solution-oriented, and predictive.

Dennis Drew and Donald Snow explain that “The modern strategy process...consists of at least five fundamental, interconnected, and sequential decisions that define and shape strategy...” Their process begins with “broad and occasionally abstract decisions about long-term national objectives.”<sup>1</sup> National purpose underpins this broadly defined vision, which guides subsequent, as well as subordinate, strategy decisions. The U.S. Army War College’s *Guide to National Security Issues, Volume II: National Security* describes national purpose as the enduring values and beliefs that, when translated into purpose, “represent the legal, philosophical, and moral basis for continuation of the American system.” Strategists use the national purpose to develop core national interests.<sup>2</sup>

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<sup>1</sup> Drew and Snow, *Making Twenty-First-Century Strategy*, 14.

<sup>2</sup> Bartholomees, “U.S. Army War College Guide to National Security Issues,” 413–14.

The Army War College teaches four general U.S. core national interests:

1. Physical security – defined as the protection against attack on the territory and people of the United States to ensure survival with fundamental values and institutions intact.
2. Promotion of values
3. Stable international order
4. Economic prosperity<sup>3</sup>

These four categories of core national interests can take a variety of forms regarding international security challenges that national security professionals must address, which can pose varying levels of threat to the interest itself. Donald Neuchterlein provides a framework of four levels of intensity to define how important a given interest is to the U.S.

1. Survival – the physical existence of a country is in jeopardy due to attack or threat of attack.
2. Vital – results in serious harm to the nation unless strong measures, including the use of force, are taken to protect the interest.
3. Major – a country's political, economic, or social well-being may be adversely affected but the use of force is deemed excessive.
4. Peripheral – national interests are involved but the country will not be particularly effected by the outcome.<sup>4</sup>

Drew and Snow align the support of one or more national interests with the ends of grand strategy, while “the ways and means to achieve U.S core national interests are based on the national leadership’s strategic vision of America’s role in the world.”<sup>5</sup> This broad vision translates into national policy that "is the start point for strategy formulation at the national level."<sup>6</sup>

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<sup>3</sup> Bartholomees, “U.S. Army War College Guide to National Security Issues,” 414.

<sup>4</sup> Neuchterlein as referenced in Drew and Snow, *Making Twenty-First-Century Strategy*, 32–34.

<sup>5</sup> Drew and Snow, *Making Twenty-First-Century Strategy*, 31; Bartholomees, “U.S. Army War College Guide to National Security Issues,” 414.

<sup>6</sup> Bartholomees, “U.S. Army War College Guide to National Security Issues,” 414.

BSV forms the basis for framing a national security problem. I discuss how a strategic design methodology defines and addresses the problem further in this chapter’s “processes” section but for now it suffices to say that the SV that strategic design produces must respond to a challenge or problem that threatens the U.S. BSV. Strategy theorist Colin Gray opens the door for the broad and specific roles of vision in strategic design by defining vision as “a concept of the desired condition that serves to inspire, and provide moral and political authority for, policy preferences and choices.”<sup>7</sup> Indeed, he has captured the role of a broad national strategic vision and the desired qualities of a specific vision created in response to a challenge.

Sir Basil Liddell Hart describes the role of grand strategy as “coordinat(ing) and direct(ing) all the resources of a nation, or band of nations, toward the attainment of the political object of the war – the goal defined by fundamental policy.”<sup>8</sup> This view reinforces both Drew and Snow and Bartholomees’ assertions that policy and broad vision create the foundation of the specific vision, and highlights that the specific vision, the response to a threat, must be holistic.

The 2015 U.S. *National Security Strategy* describes this as a “Whole of Community approach, bringing together all elements of our society – individuals, local communities, the private and non-profit sectors, faith-based organizations, and all levels of government...”<sup>9</sup> Liddell Hart captures a similar sentiment in saying that grand strategy “take(s) into account of and apply the power of financial pressure, of diplomatic pressure, of commercial pressure, and, not least of ethical pressure, to weaken the opponent’s will.”<sup>10</sup> Drew and Snow likewise describe the “role of the strategy process” as aligning the means of instruments of national power, which they define as diplomatic, economic, and military instruments.<sup>11</sup>

Design theorist Bryan Lawson expands the idea of holistic vision beyond integrating instruments and elements into a solution. While strategy literature clearly identifies that strategists must view the ways and means within a strategy holistically to

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<sup>7</sup> Gray, *The Strategy Bridge*, 18.

<sup>8</sup> Liddell Hart, *Strategy*, 322.

<sup>9</sup> Office of the President, “National Security Strategy 2015,” 8.

<sup>10</sup> Liddell Hart, *Strategy*, 322.

<sup>11</sup> Drew and Snow, *Making Twenty-First-Century Strategy*, 31.

achieve the ends, Lawson introduces the idea that designers should view the relationship between the design problem and solution as an integrated, interactive activity. The “tension between a problem view and solution view of the situation is at the very heart of the way designers have to think.” This interplay creates design solutions that seemingly do not connect to specific elements of the problem but, nonetheless, solve the totality of it.<sup>12</sup> Taken together, strategy and design thinkers produce the idea that a specific strategic vision is holistic in the way it integrates instruments of national power and in the way it views the interaction between the problem and solution. Further, the design must focus on solving a problem.

Vision, as an output of a strategic design process, must also be predictive. Liddell Hart explains that, “Strategy depends for success, first and foremost, on a sound *calculation and co-ordination of the end and the means*,” and that “grand strategy looks beyond the war to the subsequent peace.”<sup>13</sup> Strategy theorists Everett C. Dolman and Colin Gray parallel this idea in acknowledging that strategy anticipates outcomes in component behavior and integrates anticipated outcomes to exert influence.<sup>14</sup> Dolman further codifies the predictive nature of strategy in writing “Strategy changes the context within which those events will happen.”<sup>15</sup> Likewise, Lawson views design as predictive in that it “prescribes and creates the future.”<sup>16</sup>

To summarize, vision is a two-part component to the comparative model. First, strategic design must be rooted in the BSV created by national purpose, national interests, and the policies those create. Second, the strategic design must create an SV that is holistic, solution-oriented, and predictive.

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<sup>12</sup> Bryan Lawson, *How Designers Think: The Design Process Demystified*, 4. ed (Amsterdam: Elsevier/Architectural Press, 2006), 122–25, 271.

<sup>13</sup> Liddell Hart, *Strategy*, 322.

<sup>14</sup> Everett C Dolman, *Pure Strategy: Power and Principle in the Space and Information Age* (New York, NY: Frank Cass, 2005), 5–6, 15; Gray, *The Strategy Bridge*, 18.

<sup>15</sup> Dolman, *Pure Strategy*, 6.

<sup>16</sup> Lawson, *How Designers Think*, 125.

## Time

Strategy must “take a long view” to obtain a better peace.<sup>17</sup> Similarly, Dolman observes that strategy is “a plan for attaining continuing advantage.”<sup>18</sup> These two ideas imply that strategy, even in response to a specific problem, continues beyond the immediate issue. Lawson provides one reason for this continuing nature in his observation that a design solution both solves the current problem and likely creates other design problems in the future. Lawson provides a second reason in saying that, “the designer’s job is never really done, and it is probably always possible to do better.”<sup>19</sup> Drew and Snow concur that the environment changes over time and “thus, an appropriate strategy at one point may be forced to yield to another strategy at a different point.”<sup>20</sup> The Army War College’s *Guide to National Security Issues* also highlights that “national interests and policy can change over time.”<sup>21</sup> A change of that nature could constitute a sweeping change to the broad vision that serves as the foundation of a strategy, thus requiring modification to the existing strategy at a minimum.

Amalgamating these concepts suggests two roles for time within an effective strategic design methodology: the general time horizon espoused by the methodology, and duration of viability. Echoing Liddell Hart, a strategic design methodology should take a long view in the designs it produces; however, just how long that view should be remains a question. In *Good Strategy, Bad Strategy: The Difference and Why it Matters*, Richard P. Rumelt defines good strategy’s time horizon relative to the competition; good strategy is “less myopic – less shortsighted – than others.” but caveats that the long view must be root in “the facts on the ground, not the vague outlines of the distant future.”<sup>22</sup> While finitely undefined, it is clear that strategy’s time horizon must exceed the present or the current problem. To this end, the best metric for ensuring continuance within a strategic design may be the methodologies’ insistence on, or mechanisms for, asking “and then what?”

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<sup>17</sup> Liddell Hart quoted in Biddle, “Strategy and Grand Strategy: What Students and Practitioners Need to Know,” 16.

<sup>18</sup> Dolman, *Pure Strategy*, 6.

<sup>19</sup> Lawson, *How Designers Think*, 122–23.

<sup>20</sup> Drew and Snow, *Making Twenty-First-Century Strategy*, 46–47.

<sup>21</sup> Bartholomees, “U.S. Army War College Guide to National Security Issues,” 418.

<sup>22</sup> Rumelt, *Good Strategy, Bad Strategy*, 261.

Duration of viability has two contributing elements: the time required to achieve effects and the time that strategists expect the strategy to remain viable. The specific vision of strategic design, discussed in the previous section, predicts and creates the future. However, the strategic environment in which the U.S. operates is complex, varied, and competitive.<sup>23</sup> As such, elements of the environment, both international and domestic, can change before a strategy realizes its desired effects, necessitating modification to or complete change in the design.<sup>24</sup> An effective strategic design methodology should recognize the anticipated time to achieve the effects desired within the strategy to highlight the critical period for achieving advantage within a specified problem.

Continuing with the idea that the strategic environment is domestically and internationally dynamic, and integrating the notion that design is predictive, a strategic design methodology should seek to identify when strategists expect the environment to change to such a degree that requires significant alteration. The process of determining when change may be necessary codifies additional critical periods for monitoring the progress and effectiveness of a strategy. Thinking through significant shifts in the strategic environment also aids the strategist in maintaining the long-view for strategy development. Further, in assessing how long a design will be applicable, strategists are lead to evaluate the second and third order effects of their design, anticipating when other design problems emerge because of their work.

In sum, a comparative model for strategic design methodologies will seek to identify the methodology's concept of time horizon, how far the methodology facilitates or necessitates the strategist to look beyond the present without becoming obscurely predictive of a future that is unknowable. Another way to view this component is how well the methodology inspires strategists to ask and answer "and then what" within the design they develop. The second element involving time is to determine how the methodology identifies or codifies the duration of a design's viability. Establishing duration of viability, both in terms of the time required to achieve the design's desired effects and in terms of the long-term durability of the design, should reinforce the

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<sup>23</sup> Drew and Snow, *Making Twenty-First-Century Strategy*, xiii–xiv.

<sup>24</sup> Bartholomees, "U.S. Army War College Guide to National Security Issues," 417–18.

methodology's mechanisms for forward-looking and highlight periods of critical vulnerability within the design.

## Processes

Lawson's analysis of design thinking and processes concludes that there is no single, correct process for design.<sup>25</sup> However, design and strategy theory detail characteristics that should be present within a strategic design methodology to produce an effective strategy. This section expands on the roles of problem identification, solution focus, integration, iteration, and prescription as critical components within the "processes" element of the comparative model.

**Problem Identification.** Problem identification falls into "processes" because strategic issues, challenges, and competitions are complex and ill defined, like Lawson's description of design problem.<sup>26</sup> Therefore, how a strategic design methodology identifies and defines a problem should not be a simple, one-step event. As Dolman observes, "The strategist will instead search for the right questions; those to which the panorama of possible answers provides insight and spurs ever more questions."<sup>27</sup> The questions strategists ask refines and defines the nature, scope, and components of the problem towards what Drew and Snow define as strategy's concern, "doing the right job."<sup>28</sup> Rumelt parallels Drew and Snow in saying that good strategy "focuses on solutions to critical problems," rather than every problem present.<sup>29</sup>

Finding the critical problem and prioritizing it over other problems requires value judgment and choice. Rumelt warns, "When this hard work is not done, weak amorphous strategy is the result."<sup>30</sup> Lawson notes that designers will likely perceive the value judgments involved in selecting the critical problem, identifying and prioritizing the components of the problem and how best to solve them differently because those value judgments are subjective.<sup>31</sup> The interaction of questions, answers and insights, and subjective value interpretation allow each member of the design team to use different

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<sup>25</sup> Lawson, *How Designers Think*, 123.

<sup>26</sup> Bryan Lawson, *What Designers Know* (Amsterdam: Elsevier/Architectural Press, 2009), 19.

<sup>27</sup> Dolman, *Pure Strategy*, 4.

<sup>28</sup>" Drew and Snow, *Making Twenty-First-Century Strategy*, 24.

<sup>29</sup> Rumelt, *Good Strategy, Bad Strategy*, 2.

<sup>30</sup> Rumelt, *Good Strategy, Bad Strategy*, 59.

<sup>31</sup> Lawson, *How Designers Think*, 120, 124.

lenses in assessing the problem and, ultimately, develop a comprehensive view of that which requires attention.

**Solution-oriented.** Strategic design, like design in general, is based on a need for action, a need to solve the critical problem.<sup>32</sup> This clearly parallels the idea that identifying the critical problem is central to strategic design processes. Lawson explains that the design process is "a kind of negotiation between the problem and solution and that problems are not necessarily understood by designers in advance of them generating solutions.<sup>33</sup> Dolman may not categorize strategy's focus as a "solution" but he certainly agrees that strategy drives toward a problem's solution in saying that strategy "is a plan for a series of actions that lead the state toward a desired condition or policy."<sup>34</sup> Brodie more explicitly links strategy to solutions in observing that "strategic thinking, or 'theory' if one prefers, is nothing if not pragmatic. "Strategy is a 'how to do it'...a guide to accomplishing something and doing it efficiently...Above all, strategic theory is a theory for action."<sup>35</sup> Lastly, Biddle observes that solutions must be "feasible, accessible, and sensibly matched to the problem."<sup>36</sup>

The comparative model will seek to identify how a strategic design methodology translates its problem identification process into a solution. The model must also identify how the methodology defines solution, whether it uses Dolman's qualitative "better or worse" in seeking continuance within policy or "good or bad" in seeking a final decision.<sup>37</sup> Lastly, the model will seek to describe how the strategic design methodology balances the known and predicted to create a solution that is both achievable and clearly linked to the problem the design addresses.

**Integration.** Integration has two meanings to effective strategy. First, Rumelt asserts that good strategy "leverages multiple sources of power through internal coherence and creative reframing of the problem to provide new advantages."<sup>38</sup> Good strategy integrates the instruments of national power to achieve synergy and create new

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<sup>32</sup> Lawson, *How Designers Think*, 125.

<sup>33</sup> Lawson, *What Designers Know*, 90.

<sup>34</sup> Dolman, *Pure Strategy*, 4.

<sup>35</sup> Bernard Brodie, *War and Politics* (New York: Macmillan Publishing Co., 1973), 452f.

<sup>36</sup> Biddle, "Strategy and Grand Strategy: What Students and Practitioners Need to Know," 13.

<sup>37</sup> Dolman, *Pure Strategy*, 12.

<sup>38</sup> Rumelt, *Good Strategy, Bad Strategy*, 9.

opportunities. Second, Lawson observes that design incorporates different viewpoints of the problem to achieve holistic solutions.<sup>39</sup> Lawson's point reinforces the integration of instruments but also indicates that design integrates people who produce interpretations of the problem and ideas for the solution.

Drew and Snow define national grand strategy as "the art of coordinating the development and use of the instruments of national power to achieve national security objectives" and they warn that without a coordinated grand strategy, "the instruments of power can work at cross-purposes."<sup>40</sup> This viewpoint on grand strategy reinforces the idea that a strategy's effects, and those individuals contributing to the strategic design process, must work together. However, I must draw an important distinction between coordination and integration. Coordination is "harmonious combination or interaction, as of functions or parts," while integration is "an act of instance of combining into an integral whole."<sup>41</sup> A well-coordinated strategy prevents instruments of power from conflicting in pursuit of a unified purpose, while a well-integrated strategy creates a solution that "may not map plainly to elements of the problem but still solve it."<sup>42</sup> Integrated strategy synthesizes, rather than sequences, the effects of the instruments of power.

The comparative model for strategic design methodologies will assess how a methodology's processes integrate the instruments of national power both in terms of their effects and in terms of the participants. The model must identify the presence of Lawson's holistic solution as an indicator of integrating effects. It will also assess how the methodology views the members of the design team, who should participate, and perhaps how they are involved.

**Iteration.** Lawson observes that sequential processes fail to reflect interactions between the problem and solution and the way that communication interfaces with the

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<sup>39</sup> Lawson, *What Designers Know*, 11, 13.

<sup>40</sup> Drew and Snow, *Making Twenty-First-Century Strategy*, 17.

<sup>41</sup> "Coordination | Define Coordination at Dictionary.com," accessed January 28, 2017, <http://www.dictionary.com/browse/coordination>; "Integration | Define Integration at Dictionary.com," accessed January 28, 2017, <http://www.dictionary.com/browse/integration>.

<sup>42</sup> Lawson, *What Designers Know*, 11.

activities of analysis, synthesis, and evaluation.<sup>43</sup> He quotes Schön in saying that design thinking is a “reflective process, a conversation between problem and solution.”<sup>44</sup> As designers identify new layers of the problem or provide new perspectives on it, they create new solution ideas, which, in turn, provide new perspectives on the problem. This cyclic dialogue between the problem and solution further interact with, and between, the foundational steps Lawson recognizes in design methods: analysis, synthesis, and evaluation.

While the strategic design process itself must be iterative, an effective methodology must also facilitate iteration based on external inputs. Such inputs can originate from approval or disapproval of the subjective value judgments required within the design. Dr. Alan Stolberg provides another mechanism forcing iteration by recommending that strategists continually evaluate a strategy for success, failure, or required adaptation.<sup>45</sup> This type of iteration refers not solely to the process, but to the process’ ability to accept new inputs and adapt. Thus, the comparative model will look for iteration across and throughout a methodology’s processes as well as its ability to iterate the design or strategy itself.

**Level of prescription.** Strategic design ideates and then creates the future. Strategy and design processes are contemplative and cognitive, focused on attaining understanding, insight, and vision; however, each has a moment of transition where understanding, insight, and vision must become a reality. Colin Gray describes this as “strategy’s hydra-headed character (which) gravitates towards the twin compound behaviors of strategy-making and strategy execution.”<sup>46</sup> Brodie echoes the prescriptive side of strategy in calling strategic theory a “theory for action.”<sup>47</sup> Drew and Snow follow by describing the strategy process as “a plan of action that organizes efforts to achieve an objective.”<sup>48</sup> Dolman also recognizes the concrete side of strategy in calling it a “plan for

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<sup>43</sup> Lawson, *How Designers Think*, 49.

<sup>44</sup> Lawson, *What Designers Know*, 84.

<sup>45</sup> Stolberg, “How Nation-States Craft National Security Strategy Documents,” 39.

<sup>46</sup> Gray, *The Strategy Bridge*, 15.

<sup>47</sup> Brodie, *War and Politics*, 452f.

<sup>48</sup> Drew and Snow, *Making Twenty-First-Century Strategy*, 13.

continuing advantage” and “a plan that sets into motion a series of actions or events...”<sup>49</sup> These ideas highlight that a strategic design must drive toward action; that it should include milestones essential to creating motion toward the policy objective. In *Strategy and the National Security Professional: Strategic Thinking and Strategy Formulation in the 21<sup>st</sup> Century*, Harry Yarger categorizes these milestones as key strategic factors. He defines key strategic factors as “factors the strategist determines are at the crux of interaction within the environment that can or must be used, influenced, or countered to advance or protect the specified interests.”<sup>50</sup>

Having established that strategy should have an action component, Rumelt provides some clarification on how prescriptive strategy should be, “It does not need to point to all the actions that will be taken as events unfold, but there must be enough clarity about action to bring concepts down to earth.”<sup>51</sup> Taken together, Yarger’s and Rumelt’s insights scope the level of prescription desired in strategic design to critical items necessary to advance the strategy and create a shared vision, rather than every action-step required for execution. Tempered prescription creates flexibility within a strategic design by allowing executors to leverage creativity and capitalize on emergent opportunities within their realm, that the design team could not predict in the design, without detracting from the overall vision. Tempered prescription also allows strategic design to “compliment and interact with planning,” which Banach and Ryan see as essential for design to be effective.<sup>52</sup>

The comparative model will identify how prescriptive each strategic design methodology is by questioning how each methodology views milestones or key strategic elements. It will describe how a methodology defines and prioritizes "what must be done" to achieve the vision and what level of flexibility remains for subordinates to connect strategic elements as well as conduct their established detailed planning processes.

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<sup>49</sup> Dolman, *Pure Strategy*, 6, 11.

<sup>50</sup> Yarger, *Strategy and the National Security Professional*, 124.

<sup>51</sup> Rumelt, *Good Strategy, Bad Strategy*, 87.

<sup>52</sup> Banach and Ryan, “THE ART OF DESIGN,” 106.

## Methods for Communication and Collaboration

Biddle observes that communication among all parties involved in developing or executing a strategy is paramount to ensuring the strategy's success over time.<sup>53</sup> Gray echoed that "Feedback – feed-up, feed-down, and feed across – and adaptation are the key terms describing how strategy is designed, refined, and applied in real time."<sup>54</sup> Similarly, Lawson explains that design is a collaborative process between the design team, clients, and users.<sup>55</sup> It is evident, then, that a strategic design methodology must be collaborative, foster communication within the design team as well as up and down across involved organizations, and contain feedback mechanisms that enable communication.

Design literature provides several insights into mechanisms that promote communication, collaboration, and feedback. Lawson first observes that designers within a discipline begin with a common lexicon but also that, throughout the design process the design team develops a common lexicon with respect to that design. Key terms expand their meaning to encapsulate whole ideas or influences within the design. This joint lexicon facilitates design conversations generally and within a design team because "Conversations cannot meaningfully take place unless there are some shared ideas involving some reasonably well-defined and understood features."<sup>56</sup>

Design incorporates various types of drawings to facilitate communications. Presentation drawings "are the drawings through which designers communicate their work to clients and other from who they may need some agreement, consent, or permission to continue."<sup>57</sup> In effect, these types of drawings provide a progress update and opportunity for principal actors to approve the subjective design decisions inherent to the design process. Consultation drawings seek feedback, rather than decisions, from clients and users. "These drawings are done not so much to convince as to elicit a response in order to assist in the designing process itself."<sup>58</sup> Chief Executive Officer of

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<sup>53</sup> Biddle, "Strategy and Grand Strategy: What Students and Practitioners Need to Know," 39.

<sup>54</sup> Gray, *The Strategy Bridge*, 28.

<sup>55</sup> Lawson, *What Designers Know*, 84; Lawson, *How Designers Think*, 249–57.

<sup>56</sup> Lawson, *What Designers Know*, 90, 92.

<sup>57</sup> Lawson, *What Designers Know*, 34.

<sup>58</sup> Lawson, *What Designers Know*, 36.

IDEO, Tim Brown, uses a similar method that he calls prototyping. He describes the function and purpose of prototyping in his 2005 article in *Fast Company*.

Design thinking is inherently a prototyping process. Once you spot a promising idea, you build it. The prototype is typically a drawing, model, or film that describes a product, system, or service. We build these models very quickly; they're rough, ready, and not at all elegant, but they work. The goal isn't to create a close approximation of the finished product or process; the goal is to elicit feedback that helps us work through the problem we're trying to solve. In a sense, we build to think.<sup>59</sup>

Brown's description of prototyping aligns well with Schön and Lawson's ideas about the internal and external conversations that stimulate practical design.

Instruction drawings are a final example of the types of drawings used within the design process. Lawson describes instruction drawings as “an unambiguous one-way form of communication from designer or design team to constructor or supplier. They are usually only done after the designed object is largely resolved and they contain certain knowledge in the form of instructions for those responsible for physically creating the object.”<sup>60</sup> Instruction drawings are prescriptive and equate to Banach and Ryan’s primary output of the military design process, a planning directive.<sup>61</sup> Instruction drawings physically represent the transition between thinking and doing. Lawson offers the use of narrative an alternative means of transitioning from the design process to design execution. Narrative uses words, rather than pictures, to describe what the design should look like, what purpose it should serve, and how it should serve that purpose. Unlike an instruction drawing, though, narrative leaves the design’s physical form to the interpretation of the executor.<sup>62</sup>

The comparative model will assess each strategic design methodology’s approach to communication and coordination by identifying what mechanisms it employs to translate ideas into action, to seek feedback and decisions from principals, and to

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<sup>59</sup> Tim Brown, “Strategy by Design,” *Fast Company*, June 2005, 53–54.

<sup>60</sup> Lawson, *What Designers Know*, 34.

<sup>61</sup> Banach and Ryan, “THE ART OF DESIGN,” 109.

<sup>62</sup> Lawson, *What Designers Know*, 86–88.

generally represent the design. The model will use terms discussed here to classify the mechanisms, for example, reflective, decisional, feedback seeking, and prescriptive.

### Risk Assessment

In *The Strategy Bridge: Theory for Practice*, Gray's fifth dictum is "strategy is adversarial; it functions in both peace and war, and it always seeks a measure of control over enemies (and often over allies and neutrals also)."<sup>63</sup> We have already seen that designing and developing effective strategy require subjective value judgments and choices about what the critical problem is. Biddle also notes "strategy rests on assumptions."<sup>64</sup> These things, the adversary and his plans, our choices and priorities, and our assumptions, produce risk. Drew and Snow note, "The making and implementation of strategy at the national level is largely an exercise in risk management and risk reduction."<sup>65</sup>

Alan Stolberg recommends that nations "Include and formalize risk assessment analysis for all national security-type strategies,"<sup>66</sup> and the Army War College's "Guide to National Security Issues" concurs that "From the nation's purpose – as well as an understanding of the nation's domestic and global needs – the United States derives its enduring core national interests. The strategist should return to these considerations in terms of risk assessment at every derivative level of strategy formulation."<sup>67</sup> Stolberg elaborates that risk assessment should "identify potential strategy spoilers as well as modifiers to address the spoilers."<sup>68</sup> Stolberg does not define what a spoiler is but provides an example of what spoilers, "such as unanticipated actions that an opponent might take or the occurrence of natural events like poor weather..."<sup>69</sup>

The comparative model for strategic design must, then, both identify how a methodology assesses and mitigates risk. Stolberg explains that some governments have informal risk assessment methods that seek external input to determine spoilers and modifiers. Others, like Australia and the United Kingdom (UK), have formal risk

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<sup>63</sup> Gray, *The Strategy Bridge*, 33.

<sup>64</sup> Biddle, "Strategy and Grand Strategy: What Students and Practitioners Need to Know," 2.

<sup>65</sup> Drew and Snow, *Making Twenty-First-Century Strategy*, xi.

<sup>66</sup> Stolberg, "How Nation-States Craft National Security Strategy Documents," 123.

<sup>67</sup> Bartholomees, "U.S. Army War College Guide to National Security Issues," 413–14.

<sup>68</sup> Stolberg, "How Nation-States Craft National Security Strategy Documents," 123.

<sup>69</sup> Stolberg, "How Nation-States Craft National Security Strategy Documents," 4.

assessments. Specifically, the UK applies a National Strategic Risk Assessment process to “compare, assess, and prioritize all major risks over the next 5 to 20 years that could potentially disrupt components of the national strategy.”<sup>70</sup> The comparative model will include whether the risk assessment/mitigation process is formal or informal.

### The Model

Table 1 summarizes this chapter by organizing the elements of the comparative model for strategic design into primary and subordinate elements and, when appropriate, questions or indicators. Chapters three through five will use this comparative model to evaluate three strategic design methodologies.

**Table 1: A comparative model for strategic design methodologies**

Primary element	Subordinate element	Question/Indicator
Vision	Broad strategic vision	
	Specific vision	-Predictive -Holistic
Time	Time horizon	
	Duration of viability	-Time to achieve effects? -Time expected to be viable?
Processes	Problem identification	-Focus on critical problem? -How are subjective value judgments made?
	Solution-oriented	-Method to translate problem into solution -How are “solutions” defined? -What is the balance between known facts and predicted events?
	Integration	-Are instruments of power integrated or coordinated? -Who is the design team?
	Iteration	-How is the problem-solution conversation conducted? -How are external influences (decision, monitoring) incorporated?
	Level of prescription	-How are milestones or strategic effects used? -How is “what must be done” defined and prioritized?
Methods for communication and collaboration		-Prescriptive products -Feedback and decisional products -Lexicon
Risk assessment		-How is risk assessed? -How is risk mitigated?

*Source: Author’s Original Work*

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<sup>70</sup> Stolberg, “How Nation-States Craft National Security Strategy Documents,” 109.

## Chapter 3

### Net Assessment

Chapters three through five introduce net assessment, scenarios and strategic conversations, and the Multi-Domain Operational Strategist's (MDOS) Strategic Design Method (SDM) as potential strategic design methodologies. Each methodology's chapter provides an overview of the method, analysis using the comparative model developed in Chapter two, and a summary of the methodology's strengths and weaknesses.

I selected these methodologies because they represent a range of viewpoints and origins and are at least vaguely familiar to strategy students. Net assessment is a long-standing process that the U.S. Department of Defense leverages to inform strategy decisions. The Department's Office of Net Assessment is credited with, among other things, identifying the economic component of the U.S.-Soviet Cold War arms race that eventually lead to the Soviet's fall, China's rise as a strategic competitor to U.S. hegemony, the revolution in military affairs, and weapons proliferation.<sup>1</sup>

Author Peter Schwartz targeted the business sector when he published *The Art of the Long View* in 1991, detailing his scenario and strategic conversation methods. Schwartz subsequently published works that apply his methodology to worldwide political, economic, social, technological and informational trends, as well as the rise of China.<sup>2</sup>

At the USAF Air Command and Staff College (ACSC), the Director of Joint Education, Dr. Jeffrey Reilly, developed the MDOS strategic design methodology; he teaches it as part of the MDOS elective at ACSC. The MDOS SDM is an adaptation of Dr. Reilly's operational design methodology but he specifically constructed it to develop strategy at the strategic and policy levels.

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<sup>1</sup> Andrew F. Krepinevich and Barry D. Watts, *The Last Warrior: Andrew Marshall and the Shaping of Modern American Defense Strategy*, First edition (New York: Basic Books, 2014), 247.

<sup>2</sup> Peter Schwartz's works on these topics include: *The Long Boom: A Vision for the Coming Age of Prosperity* (Perseus, 1999), *Inevitable Surprises: Thinking Ahead in a Time of Turbulence* (Gotham Books, 2003), *China's Futures: Scenarios for the World's Fastest Growing Economy, Ecology, and Society* (Jossey-Bass, 2000), and numerous articles.

## Method overview

Secretary of Defense Schlesinger formally established the DOD's Office of Net Assessment and appointed Andrew Marshall its director on 2 October 1973; he remained there until his retirement in 2015.<sup>3</sup> Marshall based his conception of net assessment on a competition framework wherein "the primary focus will be on appropriate comparisons of the U.S. and other nations' security related forces, programs, and activities. Since Marshall intended national net assessments to provide insight for policymakers at the highest levels by discovering and illuminating the nature of major national security problems and opportunities, they will be concerned with national security in its broadest sense, embracing political, economic, and technological problems as well as purely military ones."<sup>4</sup>

Marshall decreed net assessments to be "the most comprehensive form of analysis in the hierarchy of analysis."<sup>5</sup> Net assessment differs from systems analysis, the DOD's preferred analytical method from 1961-1973, in its comprehensiveness and eclectics. Net assessors use methods "including those of systems analysis, but also war gaming, historical analogy making, and traditional forms of reasoning" to diagnose existing or potential problem areas, "highlighting efficiency and inefficiency in the way we and others do things, and areas of comparative advantage with respect to our rivals."<sup>6</sup>

Net assessment employs multiple analytical, inductive, and comparative methods to evaluate competitors. Net assessors evaluate sprawling strategic competitions, deconstructing broad strategic challenges into workable components.<sup>7</sup> They seek to identify trends that indicate the competition's evolution, and asymmetries that offer advantages to either side. The end goal of net assessment is to enlighten high-level

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<sup>3</sup> Krepinevich and Watts, *The Last Warrior*, 95.

<sup>4</sup> Andrew Marshall, "Nature and Objectives of a National Net Assessment Program," April 9, 1973, 3, Box H-199, Richard Nixon Presidential Library and Museum, [http://www.nixonlibrary.gov/forresearchers/find/textual/institutional/finding\\_aid.pdf](http://www.nixonlibrary.gov/forresearchers/find/textual/institutional/finding_aid.pdf).

<sup>5</sup> Andrew Marshall, "The Nature and Scope of National Net Assessment," April 10, 1973, 1, Box H-199, Richard Nixon Presidential Library and Museum, [http://www.nixonlibrary.gov/forresearchers/find/textual/institutional/finding\\_aid.pdf](http://www.nixonlibrary.gov/forresearchers/find/textual/institutional/finding_aid.pdf).

<sup>6</sup> Eliot A. Cohen, "Net Assessment: An American Approach," 9, accessed November 28, 2016, <http://www.aaronbfrank.com/wp-content/uploads/2011/11/Net-Assessment-An-American-Approach-Cohen.pdf>; Krepinevich and Watts, *The Last Warrior*, 90–91.

<sup>7</sup> Paul Bracken, "Net Assessment: A Practical Guide," *Parameters* 36, no. 1 (Spring 2006): 92.

policymakers in their handling of national security related questions. Effective net assessment requires vast amounts of reliable data and, most critically, “sustained hard intellectual effort.”<sup>8</sup>

## Analysis

### Vision

A strategic design methodology should draw on the U.S. broad strategic vision (BSV) to begin the design methodology. National net assessment, as described by Andrew Marshall, finds its BSV in national purpose, interests, and policy. For example, in an academic net assessment focusing on Arab and U.S. strategic cooperation, author Anthony Cordesman begins by detailing four common national interests that underpin historic cooperation in the region: stability in North Africa, stability in the Levant, Gulf security, and limiting terrorist and asymmetric warfare threats. Cordesman uses these interests as themes to highlight areas where U.S. policy has either focused or deviated from those interests and the results of those U.S. actions.<sup>9</sup>

Marshall explains that national net assessments are "comparisons of the U.S. and other nations' security related forces, programs, and activities," that they are "concerned with national security in its broadest sense."<sup>10</sup> National interests and policy define national security issues; thus, the net assessment classifies a national security competition based on a presidential administration's published national interests. Net assessment assumes a long-term competition framework, identifying the U.S. competitors based on their ability to, or history of, threatening U.S. national interests and national security.

Net assessment uses national purpose, interests, and policy as its BSV, completing all elements of the comparative model for this sub-element. My assessment now turns to the specific vision, which I will refer to as SV, which net assessment creates. Chapter two explains that strategic design's SV must respond to a challenge or problem that threatens the U.S. BSV, should holistically integrate the instruments of national power to

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<sup>8</sup> Krepinevich and Watts, *The Last Warrior*, 181; Marshall, "The Nature and Scope of National Net Assessment," 4.

<sup>9</sup> Anthony H. Cordesman, "Arab-U.S. Strategic Cooperation: A Net Assessment," *Middle East Policy; Washington D.C.* 9, no. 4 (December 2002): 44–45.

<sup>10</sup> Marshall, "Nature and Objectives of a National Net Assessment Program," 3.

solve the problem and should predict outcomes from the actions and conditions within the vision.

Marshall explains that national-level net assessment is “an objective and comprehensive comparative analysis of U.S. programs, policies, and military forces with those of potential adversaries or competitors.”<sup>11</sup> These comparisons are intended to diagnose “problems and opportunities, rather than recommended actions” with the ultimate goal being to enable “high-level policymakers to achieve better understanding of our situation.”<sup>12</sup> In this sense, the SV that net assessment creates is a well-defined problem, rather than a solution. Indeed, Marshall believed policymakers should develop strategies to address the problems and opportunities unearthed in a finished net assessment.<sup>13</sup> Instead, net assessment provides a comprehensive picture of existing problems and opportunities, advanced notice of emerging challenges and opportunities, and insights into asymmetries and exploitation mechanisms that provide U.S. advantage or mitigate an opponent’s advantage.<sup>14</sup> While net assessment’s SV does not solve a problem, it does indirectly influence strategies by defining areas of comparative advantage and disadvantage within a competition.

Net assessment is predictive, though Andrew Marshall may be more comfortable calling it anticipatory. Krepinevich and Watts note Marshall’s doubt that one could correctly predict strategic outcomes because of the vast complexity and ambiguity implicit in strategic competitions. However, Marshall introduced forward-looking mechanisms to the net assessment methodology. Specifically, net assessors use scenarios to "envision alternative futures" and war games to "generate insights into reasonably effective strategies for coping with the situation."<sup>15</sup> In a 1983 net assessment focused on Indian and Pakistani nuclear proliferation, assessors used three scenarios (a Sino-Soviet conventional war, a limited war between India and Pakistan, and a general super power war) to highlight how nuclear proliferation in India and Pakistan could stabilize or

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<sup>11</sup> Marshall, “The Nature and Scope of National Net Assessment,” 1.

<sup>12</sup> Marshall, “The Nature and Scope of National Net Assessment,” 1, 3.

<sup>13</sup> Marshall, “The Nature and Scope of National Net Assessment,” 1.

<sup>14</sup> Marshall, “The Nature and Scope of National Net Assessment,” 3; Krepinevich and Watts, *The Last Warrior*, 91, 181, 247.

<sup>15</sup> Krepinevich and Watts, *The Last Warrior*, 258–59.

destabilize conflicts and affect U.S. regional interests.<sup>16</sup> These mechanisms help net assessors to anticipate how opportunities or weaknesses within a competition could develop over time and identify ways to take advantage of or mitigate them, respectively.

Net assessment is holistic in its comparison of competitors and the opportunities for U.S. advantage that it highlights. Net assessors examine each competitor's politics, economics, technologies, military capabilities, organizational behavior, logic mechanisms, and key individual actors in a dispassionate and explorative analysis.<sup>17</sup> Net assessors then make comparisons across the entire analysis subject matter to highlight "issues or questions" that, when investigated, may identify asymmetries, areas for further research, or a problem's causal mechanisms.<sup>18</sup> Marshall demonstrated this holistic approach by extrapolating the revolution in military affairs from the Cold War net assessment balance discrepancies in Soviet nuclear and conventional weapons rhetoric, which drove Marshall to subsequently analyze emerging Soviet doctrine and discover the Soviet military technology revolution.<sup>19</sup>

Net assessment incorporates all the vision components within the model. The U.S. BSV, rooted in national purpose, interests, and policy, does form the basis for defining competitions. Within its SV, the vision created to respond to a specific challenge, net assessment is holistic and predictive.

### Time

Time has two components within my comparative model: time horizon and duration of viability. Time horizon is how far forward a methodology looks. Paul Bracken asserts that "longer time spans" are one of net assessment's key strengths. He notes that net assessment actively considers the breadth of a competition's time span because subtle change "on any given day can produce large effects viewed over time."<sup>20</sup> Pacific-region net assessments in the 1980s, conducted in the context of U.S. focus on

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<sup>16</sup> Jeffrey Simon, *PACOM Net Assessment: Pakistani and Indian Nuclear Perceptions. Volume 1 - Main Report. Sanitized*. (Marina Del Rey, CA: Analytical Assessments Corporation, August 31, 1983), 2, 5–6.

<sup>17</sup> Marshall, "The Nature and Scope of National Net Assessment," 2; Krepinevich and Watts, *The Last Warrior*, 254–56.

<sup>18</sup> Marshall, "The Nature and Scope of National Net Assessment," 5; Krepinevich and Watts, *The Last Warrior*, 250.

<sup>19</sup> Stephen Peter Rosen, "The Impact of the Office of Net Assessment on the American Military in the Matter of the Revolution in Military Affairs., " *Journal of Strategic Studies* 33, no. 4 (2010): 471–78.

<sup>20</sup> Bracken, "Net Assessment," 94.

Korea, that identified China as an emerging U.S. competitor well ahead of the present strategic competition emerging reinforces Bracken’s point.<sup>21</sup>

The specific time horizon for a single net assessment will vary based on the subject and challenge; however, a few of Marshall’s former net assessors provide insight into a typical time horizon. In his basic net assessment template, Cohen recommends focusing on “long-term trends from twenty-years prior out five to ten years from present.”<sup>22</sup> Krepinevich and Watts recount Marshall’s belief that high-level policymakers needed to understand what the national security environment would look like a decade into the future to inform strategy. In an example of tailoring the time horizon for a specific assessment, Marshall and then Secretary of Defense Schlesinger elected to look five to eight years into the future in evaluating “key military competitions” that comprised the U.S.-U.S.S.R. Cold War net assessments.<sup>23</sup> For the comparative model, I will rely on Marshall’s general guideline that net assessments should look ten years into the future.

Duration of viability includes both how the strategic design methodology accounts for the time to achieve its effects and the amount of time the design is viable. Net assessment does not prescribe effects or timing; however, Marshall based his ten-year time horizon on his assumption that policy and force shaping decisions made in the near term would not realize effects until a decade later.<sup>24</sup> There is no explicit answer to how long an assessment remains viable, but given that the methodology is competition-focused and recognizes that uncertainty and a thinking competitor can spoil anticipated futures, I infer that net assessments are updated or revised when the components of a competition change significantly. An alternative option is that net assessors revisit assessments annually with the ten-year window resetting each year.

Net assessment looks five to ten years into the possible futures associated with a strategic competition to inform decisions today that will provide advantages in the subsequent decade. Net assessments are not revised or updated along a predetermined

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<sup>21</sup> Erik J. Dahl, “A Homeland Security Net Assessment Needed Now!,” *Strategic Studies Quarterly: SSQ; Maxwell Air Force Base* 9, no. 4 (Winter 2015): 80.

<sup>22</sup> Cohen, “Net Assessment: An American Approach,” 14.

<sup>23</sup> Krepinevich and Watts, *The Last Warrior*, 103–4.

<sup>24</sup> Krepinevich and Watts, *The Last Warrior*, 103.

timeline, but we can infer from the method's purpose and goals that revisions and updates would occur when the strategic environment surrounding a competition changes significantly.

## Processes

**Problem identification.** Analyzing net assessment's processes begins with problem identification; how net assessment identifies and focuses on the critical problem and how assessors make subjective value judgments within the methodology.

Krepinevich and Watts note that Marshall maintained a laser-focus on “asking the right questions” throughout his career.<sup>25</sup> As previously discussed, net assessment begins with the detailed analysis and side-by-side comparison of competitors across their sources of power, capabilities, doctrine, bureaucratic tendencies, and individual predilections.<sup>26</sup> Net assessors use the comparison to highlight issues or questions that need further development. Throughout this process, assessors look for asymmetries that the U.S. may exploit for advantage or must mitigate to avoid disadvantage. Net assessment identifies a competition’s critical problems by asking probing, broad questions and conducting refined analysis based on a symmetrical comparison of the competitors. Asymmetries and areas of potential advantage or disadvantage are the critical problems that net assessment identifies.<sup>27</sup>

Within Andrew Marshall’s Office of Net Assessment, net assessors made subjective value judgments about key asymmetries, advantages, and emerging problems based on “the line of argument” used within the assessment that Marshall then approved during the assessment review process. Beyond applying analytical tools to establish quantitatively-defined balances, assessors employ tools and interdisciplinary frameworks to appreciate “complex decision-making environments and bureaucratic dynamics” to qualitatively define the human dimension in a competition.<sup>28</sup> Marshall encouraged his net assessors to suspend any judgment or analysis until they had thoroughly outlined the

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<sup>25</sup> Krepinevich and Watts, *The Last Warrior*, 250.

<sup>26</sup> See notes 14 and 15.

<sup>27</sup> Cohen, “Net Assessment: An American Approach,” 86–87; Marshall, “The Nature and Scope of National Net Assessment,” 4–5; Krepinevich and Watts, *The Last Warrior*, 181.

<sup>28</sup> Yee-Kuang Heng, “The Return of Net Assessment,” *Survival* 49, no. 4 (Winter -2008 2007): 139.

balances between competitors across the breadth and depth of their sources of power.<sup>29</sup> Once net assessors sufficiently established the competitors' balances, assessors began their comparison and assessment by asking, "first order questions...even if the range of answers appears vague or indefinite."<sup>30</sup> Asking these critical, yet complex and possibly ill-defined questions is central to net assessment's definition of and focus on the critical problem. Net assessors make subjective value judgments that establish the critical problem through the comprehensive research and balance comparison. Fully developed balances further inform an assessor's subjective value judgments about each competitor's relative strengths and weaknesses.

**Solution-oriented.** The comparative model's second processes element seeks to evaluate the level of solution-orientation of each methodology. Net assessment enables strategists to diagnose the problem, not to provide solutions; however, Bracken notes, "Net assessment defines features of what any good strategy should have."<sup>31</sup> The asymmetries that net assessment identifies "describe how one competitor differs from another" to highlight where the U.S. may be at an advantage or disadvantage throughout a strategic competition.<sup>32</sup> These asymmetries, along with the general path an assessor believes the competition will follow, orient senior leaders and policymakers toward a strategy, but they do not dictate the strategy. Net assessment's solutions are a well-defined problem, asymmetries, and areas for U.S. opportunity across the competition under assessment. In developing these solutions, net assessors preference facts but make inferences based on emerging trends to anticipate how a competition will develop throughout the assessment period.

Marshall organized net assessments into four parts to define the balances within a competition. The first section, the basic assessment, is an "overview of the competition under examination." The second section identifies and analyzes "key asymmetries in the competition" for their "significance in terms of influence on the competition." The third section addresses "major uncertainties that could exert a significant bearing on the conclusions reached in the basic assessment." The fourth section "would address

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<sup>29</sup> Krepinevich and Watts, *The Last Warrior*, 181, 249.

<sup>30</sup> Cohen, "Net Assessment: An American Approach," 10.

<sup>31</sup> Krepinevich and Watts, *The Last Warrior*, 251; Bracken, "Net Assessment," 97.

<sup>32</sup> Bracken, "Net Assessment," 97.

emerging problem areas in the competition and, equally important, key opportunities, both of which might be exploited to improve the United States' competitive position.”<sup>33</sup>

The assessment’s structure provides a road map for strategists and policymakers to broaden their understanding of a competition, consider areas for exploitation or protection, and then think through decisions and pathways that could emerge based on possible futures. The impetus, though, remains on the strategist or policymaker to accurately translate the data and analysis provided in a net assessment into an effective strategy; meaning that net assessment is not truly solution-oriented.

**Integration.** Integration is the third process component in my comparative model. Here, I consider both how well net assessment integrates the IOP and how integrated the net assessment team is. I have already explained that net assessment comprehensively explores and assesses all sources of power for each side in a competition, but that does not answer how well that translates into strategy. The Cold War net assessment predicted that the U.S.-Soviet arms race could be economically catastrophic for the USSR. If the U.S. imposed “disproportionate costs on the USSR,” providing one example where the problem and solution fell in two different IOP.<sup>34</sup> This example supports net assessment’s ability to identify where strategists could integrate IOP to achieve an advantage or mitigate a disadvantage but the strategist remains responsible for making that translation.

The exact composition of a net assessment team is somewhat of a mystery. Krepinevich and Watts imply that in the Office of Net Assessment a single net assessor conducts most of a net assessment, working under Marshall’s supervision.<sup>35</sup> They describe the net assessment process as highly individualized, per Marshall’s insistence, so it is possible that, like the structure of a net assessment, the team could change based on the subject under analysis.<sup>36</sup>

Alternatively, Cohen describes net assessment as “an organizational product” and recommends that a net assessment organization be around a dozen people noting, “it is very hard to see how a single researcher/analyst could produce a useful study completely

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<sup>33</sup> Marshall ‘Memo for NA Staff’ quoted in Krepinevich and Watts, *The Last Warrior*, 107–8.

<sup>34</sup> Krepinevich and Watts, *The Last Warrior*, 257.

<sup>35</sup> Krepinevich and Watts, *The Last Warrior*, 249.

<sup>36</sup> Krepinevich and Watts, *The Last Warrior*, 110; Cohen, “Net Assessment: An American Approach,” 7.

on his or her own. Cohen further recommends a combination of civilian and military analysts with a variety of backgrounds, under civilian leadership.<sup>37</sup> Given that net assessment makes use of scenario planning and wargaming as mechanisms to test the net assessor's theories, it seems likely that Cohen's recommended organization more closely aligns with how Marshall's team conducted net assessment.

While the literature is conflicting on the net assessment team's composition, it is unequivocally clear that a net assessment office should avoid interagency processes. Marshall believed that interagency politics created too much potential to water down the analysis to reach consensus, resulting in an ineffective product.<sup>38</sup>

**Iteration.** The next comparative element of processes is iteration. Here I seek to identify how net assessment iterates an assessment during and after its development. Andrew Marshall's obsession with asking the "right questions" inspires net assessment's process of describing balances, making comparisons to determine key asymmetries, and then using scenarios and war games to forecast how those asymmetries play out and what new challenges or opportunities may emerge over time.<sup>39</sup> Getting to the right question requires questioning the assumptions that underlie a net assessment's analysis. Net assessment does this directly by questioning the assumptions that frame the analysis and indirectly during asymmetry analysis.<sup>40</sup> Questioning assumptions either validates or invalidates them, which in turn causes the net assessor to revise his or her analysis or framework.

Andrew Marshall provided two additional iterative mechanisms through his supervision of the assessment process, "He invariably pressed his net assessors to start with outlines of their balances before attempting any drafting, and he was rarely satisfied with the first, second, or even third iteration."<sup>41</sup> In crafting the Cold War net assessment, Marshall and Secretary of Defense Schlesinger constantly asked and evaluated, "What are the proper metrics to apply in this case? Have we framed the analysis to address the

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<sup>37</sup> Cohen, "Net Assessment: An American Approach," 21–22.

<sup>38</sup> Krepinevich and Watts, *The Last Warrior*, 101–2; Cohen, "Net Assessment: An American Approach," 22.

<sup>39</sup> Krepinevich and Watts, *The Last Warrior*, xxii.

<sup>40</sup> Krepinevich and Watts, *The Last Warrior*, 70; Eliot A. Cohen, "Toward Better Net Assessment: Rethinking the European Conventional Balance," *Int. Secur.* 13, no. 1 (1988): 87, doi:10.2307/2538896.

<sup>41</sup> Krepinevich and Watts, *The Last Warrior*, 249.

right questions?”<sup>42</sup> This collaborative questioning between Marshall and the Secretary of Defense, another mechanism for iterating, incorporated external influence. Schlesinger’s feedback demonstrates that net assessment incorporates external feedback to create iteration but, as Cohen recommends, external influences on the assessments process, were highly restricted.<sup>43</sup>

**Level of prescription.** Level of prescription is the fifth and final comparative sub-element in processes. As previously discussed, net assessment is diagnostic, not prescriptive; therefore, net assessment does not include milestones or a road map to the better peace.<sup>44</sup> Further, the asymmetries, opportunities, and challenges that net assessment identifies do not dictate either what strategists must do or how they do it to achieve U.S. advantage in a competition. Those outputs do, however, enable strategists and policymakers to make more informed choices in crafting strategy by illuminating connections and actions that they may otherwise overlook or under-analyze. Net assessors can clearly prioritize advantage areas within their assessment, signaling a focus area and making recommendations that policymakers could accept or reject. For example, a 2002 Indo-U.S. assessment highlights that securing Indian Ocean sea line of communication is “the most promising area of cooperation” between India and the U.S. and further suggests that “counter-piracy, counter-drug, counter-arms, anti-pollution and environmental remediation, and search and rescue operations” are common priorities for both nations.<sup>45</sup>

### **Methods for communication and collaboration**

This section identifies the methods that net assessment employs to enable communication and collaboration focusing specifically on product outputs that explain the prescription or support decisions and feedback and on the types of lexicon used among the team. Net assessment has one primary output, the assessment. This document is not prescriptive but describes a competition’s balances, asymmetries, uncertainties, and opportunities and challenges with an eye toward creating U.S. advantage. During the net

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<sup>42</sup> Krepinevich and Watts, *The Last Warrior*, 58.

<sup>43</sup> Cohen, “Net Assessment: An American Approach,” 22.

<sup>44</sup> Krepinevich and Watts, *The Last Warrior*, 104.

<sup>45</sup> Juli MacDonald, *Indo-U.S. Military Relationship: Expectations and Perceptions* (Office of the Secretary of Defense, Washington D.C.: Office of the Director of Net Assessment, 2002), xxi–xxii.

assessment process, draft balances and assessments provide collaboration mechanisms as the net assessment team reviews and modifies the assessment. Scenarios and war games also enable collaboration by encouraging assessors to develop and discuss alternative viewpoints and futures.<sup>46</sup> The Office of Net Assessment does not appear to have developed its own lexicon in crafting and publishing assessments; rather, they employ recognized lexicons within the Department of Defense and agencies that represent the other instruments of power.

### Risk Assessment

Net assessment does not conduct a dedicated risk assessment that identifies risks, their intensity, mitigation steps, and residual risk; however, it does not ignore risk. By conspicuously identifying uncertainties, asymmetries that create U.S. disadvantage, and emerging threats, net assessment highlights critical risk areas for strategists to consider or mitigate. Krepinevich and Watts also observe that net assessors look for “ways to mitigate the effects of those asymmetries that work in the enemy’s favor,” highlighting that net assessors do seek to identify risk mitigation measures.<sup>47</sup>

### Summary

Net assessments are informed by the U.S. BSV and create a problem-specific vision that is cautiously predictive and holistic. Net assessors look a decade into the future of a competition in conducting their assessment. This time horizon links to the assumption that strategic leader's decisions cannot impact the immediate future but can create positions of U.S. advantage a decade into the future.

Net assessment, being a diagnostic process, acutely focuses on problem identification. However, it does not directly provide prescriptions to solve the problem but it does identify areas of U.S. comparative strength or weakness and future opportunities for advantage that strategists and policymakers can choose to leverage. A net assessment includes all sources of power, bureaucratic processes, and even key leaders' influences for both competitors. This methodology does not task net assessors with integrating IOP to respond to a challenge; however, their holistic approach to balances enables them to see how strengths in one IOP could translate into advantages in

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<sup>46</sup> Cohen, “Net Assessment: An American Approach,” 18–19.

<sup>47</sup> Krepinevich and Watts, *The Last Warrior*, 181.

other areas within a competition. Integrating the IOP within a strategy or strategic design remains the strategist's providence, rather than the net assessor's. Net assessment teams are small, ranging from a single assessor and their supervisor to a small group of assessors and a supervisor. Net assessment avoids interagency processes while conducting an assessment to prevent bureaucratic politics from diluting the assessment. An assessment's iteration mechanisms are primarily internal influences like the supervisor forcing new drafts of balances and net assessors consistently questioning their assumptions that frame the assessment. Net assessment limits the iterative role of external influence to the strategists and policymakers who will use the assessment. Net assessment is not prescriptive but does contain the elements of prescription.

Mechanisms for communication and collaboration in net assessment are also internal to the net assessment office. Draft revision, scenario development, and war gaming provide opportunities for members of the assessment team to collaborate. Net assessment captures risk by defining uncertainties, asymmetries that create U.S. disadvantage, and emerging threats within a competition. While net assessment does not prescribe risk mitigation measures, net assessors do seek to identify them but leave strategists the duty of implementing mitigation techniques.

Having completed my assessment of net assessment via the comparative model, the next chapter continues to assess scenarios and strategic conversations.

## Chapter 4

### Scenarios and Strategic Conversations

This chapter explains Peter Schwartz' scenarios and strategic conversations method and examines it through my comparative model's lens. Peter Schwartz' scenario methodology allows strategists and decision-makers to rehearse the future by identifying key elements and imagining different ways in which they play out over time. Strategists repeat this process several times for different scenarios, ultimately seeking to identify and scrutinize major decisions that could occur in each scenario. Scenarios provide lenses to consider the “complex array of factors that affect any decision,” and how today’s decisions could impact the future.<sup>1</sup> Schwartz’ strategic conversations concept incorporates the scenario methodology and complements formal planning process “to further illuminate the decisions that are already being made.”<sup>2</sup> Strategic conversations expand the scenario method’s collaborative audience, encourage institutional learning and feedback, and provide a continuous mechanism to evaluate the future that builds resiliency within an organization.<sup>3</sup>

Scenario development is an eight-step process:

1. Identify a key issue or decision.
2. List key “local environment” factors that will influence the success or failure of the decision.<sup>4</sup>
3. Identify macro-level forces that influence the factors identified in step 2.
4. Rank local and macro issues based on their influence on the decision’s success and the “degree of uncertainty surrounding those factors and trends.”<sup>5</sup> Select two or three factors that are the most critical to success and the most uncertain.
5. Develop a range of scenario options that logically intermix the key elements from step 4 and provide a range of outcomes and future decisions to consider.

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<sup>1</sup> Peter Schwartz, *The art of the long view: paths to strategic insight for yourself and your company* (New York: Bantam Doubleday Dell Pub. Group, 1996), xiii–xiv, 192.

<sup>2</sup> Schwartz, *The art of the long view*, 221.

<sup>3</sup> Schwartz, *The art of the long view*, 219–23.

<sup>4</sup> Schwartz, *The art of the long view*, 242.

<sup>5</sup> Schwartz, *The art of the long view*, 243.

6. Fill in the details of each scenario, beginning by interweaving the factors identified in steps 2 and 3.
7. Enact the scenarios, focusing on how the focal issue or decision plays out over time.
8. Identify “key indicators” that will signal which scenario is closest to reality as time carries on.<sup>6</sup>

Strategic conversations begin with a small group of key leaders and experts that use their experience and insight, as well as external information and people, to consider the future and identify decisions, issues, and trends in the far horizon. Once the initial group identifies critical elements or questions, sub-groups conduct detailed scenario work in a single topic area using the methodology outlined above. Once the scenario process concludes, the organization holds broad workshops to disseminate the scenario’s insights and implications. Organization members who did not participate in the strategic conversation can reflect on these workshops and pose new questions or make new observations, which will spur the strategic conversation process to begin again.<sup>7</sup>

## Analysis

### **Vision**

Scenarios and strategic conversations can operate within or revise broad strategic vision (BSV) and specific vision (SV). Schwartz uses AT&T’s loss of their previous broad vision, or purpose, centered in ubiquitous communications services as an example that scenarios could help the company find a new purpose in the “competitive, high-technology” arena.<sup>8</sup> Schwartz, Leyden, and Hyatt published an entire volume, *The Long Boom*, detailing a “framework” for a global vision that transcends politics, religion, and identity to increase prosperity, protect the environment, and reduce violence, all using the scenario method.<sup>9</sup> Creating, or extending, BSV and SV can begin with a broad question like, “What is a realistic goal for a better tomorrow?”<sup>10</sup> This question’s intent could be to identify new purpose, or “better” could mean pursuing existing purpose. The scenario

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<sup>6</sup> Schwartz, *The art of the long view*, 246, 241–47.

<sup>7</sup> Schwartz, *The art of the long view*, 227–36.

<sup>8</sup> Schwartz, *The art of the long view*, 43.

<sup>9</sup> Peter Schwartz, Peter Leyden, and Joel Hyatt, *The Long Boom: A Vision for the Coming Age of Prosperity* (Cambridge (Mass.): Perseus Publishing, 2000), vii, 9.

<sup>10</sup> Schwartz, *The art of the long view*, 11.

method aims to keep SV realistic by asking strategists to consciously suspend their beliefs and consider how decisions or issues may affect time to come.<sup>11</sup> Scenarios and strategic conversations help to align “short-term reactions with long-term vision” and make an organization “stronger, and more resilient” by considering alternative futures where its “official future,” or SV, does not play out as the organization desired.<sup>12</sup>

Scenarios are essentially myths about the future and are the primary mechanism to create vision within this methodology. Strategic conversations spread the SV throughout an organization and then enable feedback from those who did not participate in the strategic conversation or scenario working groups.<sup>13</sup> Scenarios are not predictive; rather, they perceive possible futures now.<sup>14</sup> This methodology looks for events and decisions within a scenario to allow the scenario team and decision-makers to consider meaning and actions beforehand.

Schwartz intends the scenario and strategic conversation methodology to be holistic. *The Long Boom* demonstrates the methodology’s ability to engage integratively social, economic, military, and technological issues; this ability is certainly an ideal capability for strategic design.<sup>15</sup> The methodology espouses broad research, outside perspectives and information, and the intermixing of critical factors in developing scenarios. However, the methodology’s effectiveness at creating holistic SV rests largely on the scenario building team, their open-mindedness, thoroughness, and practice in building insightful scenarios.<sup>16</sup>

In sum, the U.S. BSV can guide the scenario and strategic conversation methodology. The methodology can either produce SV or analyze an existing specific vision’s likelihood for future efficacy. This methodology’s SV is not predictive but is holistic, assuming the scenario-building team is effective.

## Time

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<sup>11</sup> Schwartz, *The art of the long view*, 12.

<sup>12</sup> Peter Schwartz, *Inevitable Surprises: Thinking Ahead in a Time of Turbulence* (New York, New York: Gotham Books, 2004), 11; Schwartz, *The art of the long view*, 236–37.

<sup>13</sup> Schwartz, *The art of the long view*, 234–35.

<sup>14</sup> Schwartz, *The art of the long view*, 36.

<sup>15</sup> Schwartz, Leyden, and Hyatt, *The Long Boom*, 6.

<sup>16</sup> Schwartz, *The art of the long view*, 18–22, 53.

Schwartz' methodology does not have a single recommended time horizon. *The Long Boom* looks twenty years into the future.<sup>17</sup> *Inevitable Surprises* looks twenty-five years into the future.<sup>18</sup> Two examples in *The Art of the Long View*, Smith & Hawken and Shell, appear to look approximately a decade into the future.<sup>19</sup> It appears that strategists, using the scenario methodology, can tailor the time horizon to suit the question or issue under consideration. Since the scenario methodology is not predictive, it does not dictate the time to achieve effects or the time a strategy could remain viable. What it does do, though, is enable strategists to consider what an interim future might look like if their strategy is ultimately successful and what events could occur in the future that would invalidate their strategy. The methodology can also provide insights into time to achieve effects or time of viability for their decision in each scenario.

## Processes

**Problem identification.** The scenario and strategic conversation methodology begins with identifying a key problem or decision. This methodology applies an inside-out approach that originates with self-reflection, “understanding yourself and your biases, identifying what matters to you and perceiving where to put your attention,” and reflection on what decision-makers in your organization are worried about.<sup>20</sup> Reflection occurs individually and collectively within a scenario team. In driving toward a critical problem or question, strategists using scenario methodology would consciously articulate the issues and decisions they see, which when discussed by the group, may illuminate refined or supporting questions to identify what issues are critical. For example, a team could begin scenario planning focused on a portion of its labor force’s future in a company and pose an initiating question focusing on what future structure and organization would look like for that force. Initial discussions within the group could identify that their focal labor force has lost prestige in the organization, making it less

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<sup>17</sup> Schwartz, Leyden, and Hyatt, *The Long Boom*, vi.

<sup>18</sup> Schwartz, *Inevitable Surprises*, 12.

<sup>19</sup> Schwartz, *The art of the long view*, 18, 53–55.

<sup>20</sup> Schwartz, *The art of the long view*, 59, 241.

effective at recruiting new members, and then modify the foundational question to reflect a need to reinvigorate prestige among that group.<sup>21</sup>

Strategists also consider broader and narrower questions to highlight direct relationships or unintended consequences between the two in the context of the strategists' chosen decision.<sup>22</sup> The reflection process supports strategists' subjective value judgments about the problem, or decision as Schwartz normally frames it, by forcing the strategist or the team to consider other frames of their mind-set. This implies that understanding "the pitfalls and opportunities made visible by each viewpoint" creates informed value judgments. As strategists move between broad and narrow questions, the tensions and implications they identify also support informed value judgment.

**Solution-oriented.** The scenario methodology is not primarily solution-oriented. Instead, it focuses on how present actions influence, or are influenced by, the future to inform strategy selection and decision-making. Solutions, in the normal sense, can indirectly come-to-light throughout the process of scenario development and rehearsal but the scenario methodology does not provide an explicit mechanism to make a problem to solution to strategy transition. Solutions within the scenario methodology are informed decisions that allow an organization to maintain or adapt their strategy for advantage over time.<sup>23</sup> This methodology gives distinct preference to known facts and uses scenarios to order uncertainty in, not finitely predict, multiple futures. It does not designate one future as more certain, though one may be more desirable and transform into a strategy's vision.<sup>24</sup>

*The Long Boom* provides an example of designating a desirable future. In this case, it provides a global vision for peace and prosperity, and then, using scenarios to ultimately develop "guiding principles," it can help that future come to pass and help organizations navigate along the way.<sup>25</sup> Schwartz notes that, in instances like *The Long Boom*, scenarios can be useful in crafting actions to build a desired future condition but

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<sup>21</sup> Jay Ogilvy and Peter Schwartz, *Plotting Your Scenarios* (Global Business Network, 2004), 3–4, [http://www.meadowlark.co/plotting\\_your\\_scenarios.pdf](http://www.meadowlark.co/plotting_your_scenarios.pdf).

<sup>22</sup> Schwartz, *The art of the long view*, 46–59.

<sup>23</sup> Schwartz, *The art of the long view*, 3–4.

<sup>24</sup> Schwartz, *The art of the long view*, xiii–xiv.

<sup>25</sup> Schwartz, Leyden, and Hyatt, *The Long Boom*, 255–56.

that in general, “The point is not to ‘pick one preferred future,’ and hope it comes to pass (or, even, work to create it...).”<sup>26</sup>

**Integration.** Scenarios and strategic conversations openly consider all sides of a decision or issue without giving preference to one source of power over another, even if the original decision falls solely within one instrument. This methodology weaves integration throughout the problem and solution processes. For example, when developing the scenario foundations – driving forces – Schwartz analyzes “society, technology, economics, politics, and environment.”<sup>27</sup> Strategic conversations also invite a breadth of feedback and analysis between the conversation’s initial group, scenario working groups, and an organization’s wider audience as the vision of a conversation disseminates. Observations, insights, and information pertaining to how a decision will unfold in the future originate in a multitude of venues, from the carpool to formal working groups, and generate “individual observations (that) are now data for group consideration.”<sup>28</sup> Like Schwartz’ starting points for analyzing driving forces, these individual observations represent innumerable perspectives that each integrate and prioritize IOP, social factors, and technology in unique, but integral, ways.

Scenarios and strategic conversations include three types of groups: an initial group, scenario and other working groups, and the organization’s broad audience. Initial groups include key decision-makers, experts, and “others who have valuable perspectives, including organizational outsiders. The initial group’s members should represent a wide variety of experience and perspective, including ethnic, academic, experiential, and cultural backgrounds.<sup>29</sup> The initial group’s members break into sub-groups to develop scenarios based on decisions and issues highlighted in the initial group. Sub-groups bring in additional outsiders and experts to assist in scenario generation and then provide feedback to the coalesced initial group. A strategic conversation’s input-pool expands to include the entire organization when the initial group establishes workshops to spread the results of their work, opening the door for feedback from the

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<sup>26</sup> Schwartz, *The art of the long view*, xiv.

<sup>27</sup> Schwartz, *The art of the long view*, 101, 105.

<sup>28</sup> Schwartz, *The art of the long view*, 235.

<sup>29</sup> Ogilvy and Schwartz, *Plotting Your Scenarios*, 5.

organization's hidden corners.<sup>30</sup> Scenarios and strategic conversations broadly integrate both the methodology's participants and the information it considers.

**Iteration.** Schwartz describes the scenario methodology as naturally iterative, as individuals or teams naturally move "through the scenario process several times – refining a decision, performing more research, seeking out more key elements, trying on new plots, and rehearsing the implications yet again."<sup>31</sup> The scenario methodology also iterates in examining a decision's broad and narrow implications.

This examination is one mode to spur the methodology's iterative character.<sup>32</sup> Strategic conversations also support iteration as members raise new propositions "that merit further work," potentially necessitating new scenario working groups or strategic conversations.<sup>33</sup> The preceding iterative mechanisms highlight that the solution-problem conversation, within the scenario methodology's conception of solutions, is a continuous process based on interaction between an initial decision or issue, the line of questioning used in developing scenarios, the scenarios themselves, and feedback from a diverse audience.

This methodology formally incorporates monitoring mechanisms to identify the scenario that most closely aligns with the future's development and prime decision-makers for the decisions and issues that are most likely to develop based on the appropriate scenario. "The logical coherence that was *built into* the scenarios will allow logical implications of leading indicators to be *drawn out* of the scenarios," providing another mechanism for iteration, and an informed anticipation for upcoming decisions and their implications.<sup>34</sup>

**Level of prescription.** Scenarios and strategic conversations are not prescriptive but they are anticipatory. They allow strategists and decision-makers to consider the future's possibilities and prepare for a variety of futures by rehearsing their reactions to events, decisions, or crises that may arise along a path. This process contributes to the

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<sup>30</sup> Schwartz, *The art of the long view*, 228–30, 233, 235–36.

<sup>31</sup> Schwartz, *The art of the long view*, 27–28.

<sup>32</sup> Schwartz, *The art of the long view*, 57.

<sup>33</sup> Schwartz, *The art of the long view*, 234–35.

<sup>34</sup> Schwartz, *The art of the long view*, 246–47.

methodology's iteration and captures its level of prescription.<sup>35</sup> This methodology neither defines, nor prioritizes what an organization should do, rather it prepares an organization for what it might need to do.

### **Methods for communication and collaboration**

Scenarios and strategic conversations use stories as their primary communications tool. Schwartz explains, "Stories have a psychological impact that graphs and equations lack. Stories are about meaning; they help explain why things could happen in a certain way."<sup>36</sup> Scenario stories "are built around carefully constructed "plots" that make the significant elements of the world scene stand out boldly."<sup>37</sup> The methodology's stories enable strategists and decision-makers to suspend their perceptions of reality to objectively consider an alternative future; the stories also make future decisions accessible to an organization's members who did not participate in the strategic conversation.

Questions, observations, and an individual's reaction to a story are a secondary communication medium that provides feedback and supports decision-making. Working groups and workshops are essential transmission instruments to generate and disseminate questions, observations, and hypotheses from the individual all the way to the final decision-maker, making these groupings central to collaboration. Scenario developers may make use of graphs and matrices to support analysis; however, they do not generally use these resources for communication.<sup>38</sup> Schwartz rejects the "common belief that serious information should appear in tables, graphs, numbers, or at least sober scholarly language" in analyzing possibilities for the future because "important questions about the future are usually too complex or imprecise for the conventional language of business and science."<sup>39</sup>

The scenario and strategic conversation methodology generally uses plain language, or industry-specific lexicon, in articulating its scenarios external to the scenario working group. The methodology, though, does have some specific lexicon pertaining to

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<sup>35</sup> Schwartz, *The art of the long view*, xv, 9, 246.

<sup>36</sup> Schwartz, *The art of the long view*, 38.

<sup>37</sup> Schwartz, *The art of the long view*, 4.

<sup>38</sup> Schwartz, *The art of the long view*, 244.

<sup>39</sup> Schwartz, *The art of the long view*, 37.

scenario development. Scenarios use “logics: the plot which ties together the elements of the system” to tell a story about the future. Plots, created from building blocks that I will explain next, illustrate how the scenario building blocks may behave in the future, “based on how those forces have behaved in the past.”<sup>40</sup> Relevant plotlines “are derived from the behavior of real-life economies, political systems, technologies, and social perceptions.”<sup>41</sup> Schwartz highlights three common plotlines that scenario builders can consider as is or use to develop plotlines that are more appropriate: winners and losers, challenge and response, and evolution.

1. Winners and losers – “This plot starts with the perception that the world is essentially limited, that resources are scarce, and that if one side gets richer, the other side must get poorer.”<sup>42</sup>
2. Challenge and response – This plot “refers to adventure stories, in which an individual faces one unexpected test after another. Each time, as a result, the tested person emerges different from the way he was before. Overcoming the test, passing the test, is important – not for its credential, but for its effect on the hero’s character.”<sup>43</sup>
3. Evolution – “evolutionary changes are always biological in nature. They always involve slow change in one direction – usually either growth or decline.”<sup>44</sup>

These, or more tailored plots, are built around Schwartz’ scenario building blocks – driving forces, predetermined elements, and critical uncertainties. Driving forces “are the elements that move the plot of a scenario, that determine the story’s outcome” and are fundamental to “thinking through a scenario.”<sup>45</sup> Predetermined elements are those things that seem likely to occur regardless of the scenario like “slow-changing phenomenon (the development of new oil resources), constrained situations (the U.S. social security crisis), trends already in the pipeline (the aging of the baby boomers), or seemingly inevitable collisions (branch banking vs. banking through personal computers).” Identifying predetermined elements builds a sense of confidence by

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<sup>40</sup> Schwartz, *The art of the long view*, 135.

<sup>41</sup> Schwartz, *The art of the long view*, 138.

<sup>42</sup> Schwartz, *The art of the long view*, 141.

<sup>43</sup> Schwartz, *The art of the long view*, 145.

<sup>44</sup> Schwartz, *The art of the long view*, 147–48.

<sup>45</sup> Schwartz, *The art of the long view*, 101–2.

reducing the uncertainty of some policies or scenario elements.<sup>46</sup> “Critical uncertainties are intimately related to predetermined elements. You find them by questioning your assumptions about predetermined elements.”<sup>47</sup> The scenario building blocks are all closely related, an event might logically fall into a different category using a different scenario, and “give structure to our exploration of the future.”<sup>48</sup>

### Risk Assessment

The scenarios and strategic conversations methodology does not engage in an overtly labeled risk assessment; however, the entire scenario-building process is an exercise in risk assessment and mitigation. In questioning the assumptions that underpin predetermined elements, strategists identify both critical uncertainties and risks. Schwartz advocates building scenarios around the most important and most uncertain factors, effectively visualizing futures where the most critical factors are at great risk. Playing the scenario out, strategists and decision-makers realize what decisions they must make or actions they must take to mitigate risks in each threatening environment.<sup>49</sup> They also identify indicators for which risks are likely to develop as the future unfolds.

### Summary

This methodology can be informed by, identify, or assess the long-term viability of broad and specific vision. Scenarios and strategic conversations produce realistic visions intended to balance an organization’s immediate decisions with its strategy or broad vision. Its vision is not prescriptive of the future but is anticipatory of how the future might develop. The methodology’s resultant vision, and perspective, is holistic, assuming scenario builders adhere closely Schwartz’ guidance and intent. The time horizon for Schwartz’ methodology is scalable to suit the decision or issue. Schwartz has used this methodology to look two decades, or more, into the future. There is no “desired” duration of viability within this methodology but the scenarios can illuminate both time to achieve effects and time the effects will be viable within each plotline.

The scenarios and strategic conversations methodology focuses on critical decisions or issues. Scenario developers identify these decisions and issues through self-

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<sup>46</sup> Schwartz, *The art of the long view*, 110–11.

<sup>47</sup> Schwartz, *The art of the long view*, 115.

<sup>48</sup> Schwartz, *The art of the long view*, 117.

<sup>49</sup> Schwartz, *The art of the long view*, 243.

reflection and by reflecting on what causes their organizational leaders' insomnia. Developers then articulate their individual perspectives, discuss, and refine to the critical decision or issue. Scenario working groups make informed subjective value judgments through the reflection processes and by questioning their own perceptions and biases.

Solutions, in this methodology, are not ways to solve problems, solutions are informed decisions; though, the scenario methodology can illuminate problem solutions. This methodology gives heavy preference to facts in the present to build scenarios that prepare for the future. Integration is present in the scenarios and strategic conversations methodology in the way it produces solutions and in the teams that interact with the scenarios. Schwartz encourages numerous viewpoints and factors, including social, economic, diplomatic, technological, and environmental ones when developing and rehearsing scenarios.

The initial group and working groups that develop scenarios and conduct conversations are diverse and incorporate outside experts. Feedback mechanisms exist, via workshops and informal conversations that further diversify the pool of perspectives and inputs that touch a scenario. Iteration is intrinsic to scenarios and strategic conversations. The scenario process invites internal refinement and revision and, via strategic conversations and includes mechanisms to spur new scenarios and conversations as time progresses.

Schwartz' methodology also formalizes monitoring mechanisms which scenario developers identify to signal which scenario most closely resembles the unfolding future. The scenario and strategic conversation methodology is not prescriptive. Rather, it focuses on what an organization might need to do to successfully navigate a variety of futures. It is anticipant.

Scenarios and strategic conversations produce stories, which are the methodology's primary communication mechanism. The questions, observations, and individual reactions that occur within collaborative working groups and workshops provide feedback to the initial group and serve as a secondary communication mechanism. This methodology uses a unique lexicon for a scenario's elements but the actual scenarios and strategic conversations use plain language, making the methodology accessible to a wide audience. Scenarios are informal risk assessment processes.

Scenario developers question their assumptions to highlight critical uncertainties. They develop scenarios based on the greatest risk factors – importance and uncertainty – and rehearse decisions or actions that support successful outcomes in those scenarios. The scenario itself is a risk mitigation step. Having completed data collection for scenarios and strategic conversations, the next chapter continues by investigating the Multi-Domain Operational Strategist’s Strategic Design Method using my comparative model.

## Chapter 5

### Multi-Domain Operational Strategist's Method

This chapter introduces the Multi-Domain Operational Strategist's Strategic Design Methodology (MDOS SDM) as the final strategic design methodology considered in this study and analyses it using my comparative model. Dr. Jeffrey Reilly adapted the MDOS SDM from his operational design methodology he specifically to develop strategy at the strategic and policy levels.

The MDOS methodology is a three-part, iterative process that ultimately creates an integrated strategic vision linked to a national strategic end state and national interests. Readers familiar with U.S. military operational design concepts will notice some themes, concepts, and terminology in common with this methodology. However, Reilly notes several significant differences between the two methodologies:

- “Establishes the point of origin for all levels of design
- Identifies global system linkages
- Uses a taxonomy to classify national interests
- Formulates strategy based on short, intermediate, and long term problem sets vs. identify THE problem
- Provides an analytical foundation for comparing strategic response options”<sup>1</sup>

While Reilly presents his methodology in three major steps, the steps are not mutually exclusive. Strategists move between steps both intentionally and intrinsically throughout the process.<sup>2</sup>

The MDOS methodology initiates with a national security challenge, issue, or concern. Strategists begin by defining and analyzing the strategic environment. Strategists create an observed system, based on historic and present conditions, from the U.S. and its competitor’s perspectives and continue to define what each side perceives as

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<sup>1</sup> Amanda Donnelly to Jeffrey M. "REILLY and JEFFREY M. AD-23 USAF AETC ACSC/DEW", "Questions Regarding Strategic Design," January 31, 2017.

<sup>2</sup> Jeffrey M. Reilly, “A’ Strategic Approach Framework” (presented at the MDOS lecture, Air Command and Staff College, Maxwell AFB, AL, 29 Sept 15).

its desired system and end state. Strategists use multiple lenses to define the observed and desired systems for each side in the strategic competition: sources and elements of power, PMESII-PT, geography, historical context of the issue, national strategic guidance and national purpose, and key systemic linkages that influence the competition, to name a few possibilities.<sup>3</sup> Importantly, strategists analyze the national interests threatened by the competition and classify the intensity of the threat using Nuechterlein's taxonomy, described in chapter one.

In defining the environment, strategists must remain detached and objective to overcome cognitive biases like mirror imaging, relying on data and historical trends, rather than their perceptions or assumptions about the situation. Strategists produce a pictorial representation of the observed and desired systems for each competitor, noting the desired end state for each side. The design team transitions to defining the problem, step two, by analyzing the tensions between the two desired end states. They identify points of convergence, areas where the end states are parallel or complementary; points of divergence, areas where the end states are at odds; barriers, elements that prevent either competitor from achieving their desired end state; and each competitor's concept of time within the context of the challenge at hand.<sup>4</sup>

The second step in the MDOS methodology is to define the problem within the context of the competition. Strategists produce a problem statement that includes tensions between the U.S. observed system and desired end state, what environmental changes are required to achieve the desired end state, opportunities and threats that could influence the outcome, and critical limitations.<sup>5</sup> A problem statement might look like this: "Country X's aggressive claim to the YY Islands sends an unacceptable message that threatens US and regional partner access within the region and future economic viability. The US and regional allies seek freedom of access to key energy and economic resources and the establishment of the conditions necessary for long term regional

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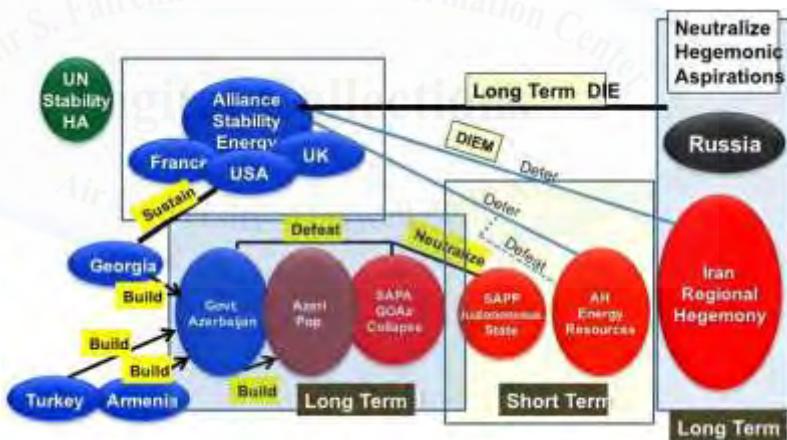
<sup>3</sup> PMESII-PT is a U.S. military acronym for political, military, economic, social, information, infrastructure, physical environment, and time.

<sup>4</sup> Jeffrey M. Reilly, "Understanding the Operational Environment" (MDOS lecture, Air Command and Staff College, Maxwell AFB, AL, September 9, 2015).

<sup>5</sup> Jeffrey M. Reilly, "Developing a Doctrinal Framework for Strategic Design" (presented at the MDOS lecture, Air Command and Staff College, Maxwell AFB, AL, September 15, 2015).

stability. Country X must be deterred from existing or future territorial claims that threaten regional and international access.”<sup>6</sup>

The MDOS methodology assumes that within a problem statement at the strategic level, multiple problem sets exist. After producing a problem statement, strategists define and analyze these problem sets in the context of global linkages to identify areas in which the problem is solvable. The MDOS methodology recognizes that nation-states have different interests that are may be unresolvable, and attempts to address problems within the context of what is attainable. This is not to say that critical problems will not fall within the points of divergence between competitors; rather, the design team attempts to frame the problem within the context of improving the overall situation, understanding that the critical problem may not be solvable at present. Strategists classify problem sets in terms of friendly, adversary, and neutral actors, time horizons, IOP that can exert influence, and desired outcomes involved. Figure 1 is an example of the pictorial output of this analysis.<sup>7</sup>



**Figure 1: Sample problem sets and global systemic linkages**

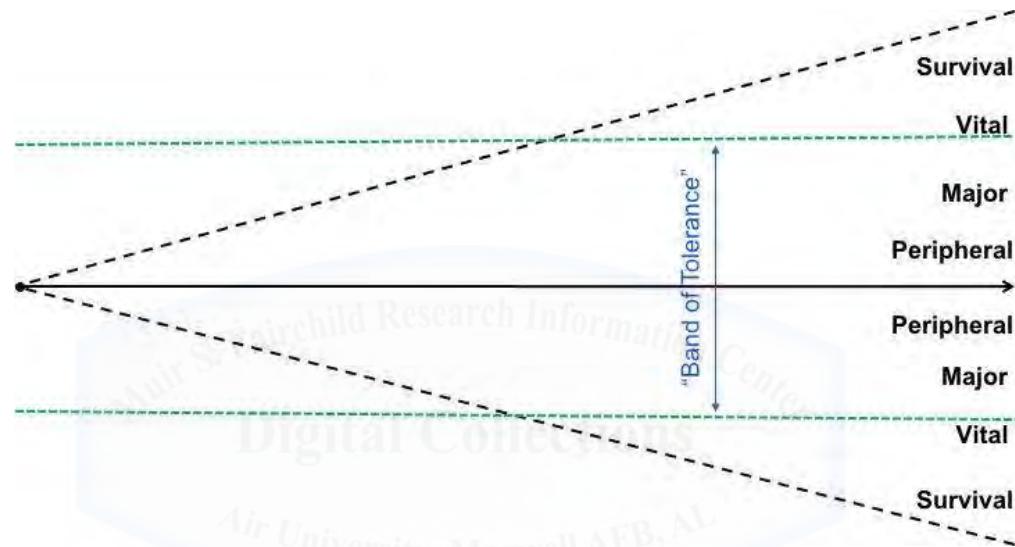
Source: Jeffrey Reilly, “A’ Strategic Approach Framework,” lecture to MDOS seminar, 29 Sept 15. Reproduced with Dr. Reilly’s kind permission.

Throughout the MDOS methodology’s first two steps, the design team conceptualizes and refines their understanding of the competition’s relation to the U.S. national interests and possible outcomes. Some of these outcomes will not further U.S. national purpose or contribute to its vision of maintaining advantage. The methodology

<sup>6</sup> Author’s personal files. Adaptation of a problem statement produced in MDOS elective, Air Command and Staff College, 11 October 2015.

<sup>7</sup> Reilly, “Strategic Approach Framework.”

codifies this possibility by introducing a “band of tolerance,” wherein the available outcomes fall in line with U.S. policy and national security guidance using Nuechterlein’s national interest taxonomy.<sup>8</sup> Figure 2 is the initial description of a band of tolerance as the design team would understand it at the transition between defining the problem, step two, and step three. Time is on the x-axis, and the range of possible outcomes represented on the y-axis. As strategist’s progress through the methodology, they return to the band of tolerance to analyze how environmental changes and their approach to solving the problem relate to tolerable outcomes.



**Figure 2: Representation of initial band of tolerance**

Source: Maj Wilford Garvin USA, MDOS student ACSC AY16, adapted from Reilly lecture “Developing a Doctrinal Framework for Strategic Design,” 3 Mar 17. Reproduced with Maj Garvin’s kind permission.

As strategists complete their initial definition of the problem, they transition into step three, developing a strategic approach that advances national interests, within the competition’s context, throughout the subsequent twenty years. Using national interests and the national strategic end state as bedrock, the design team develops a strategic focus. The strategic focus is an object or condition ultimately required to achieve the end state; military readers might liken it to an objective in terms of its guiding and unifying properties for the strategic approach. The design team then develops strategic lines of engagement based on critical factors required to achieve or support the strategic focus.

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<sup>8</sup> Reilly, “Developing a Doctrinal Framework.”

Reilly cautions that instruments of power should NOT divide strategic lines of engagement, rather by conditions or requirements.<sup>9</sup>

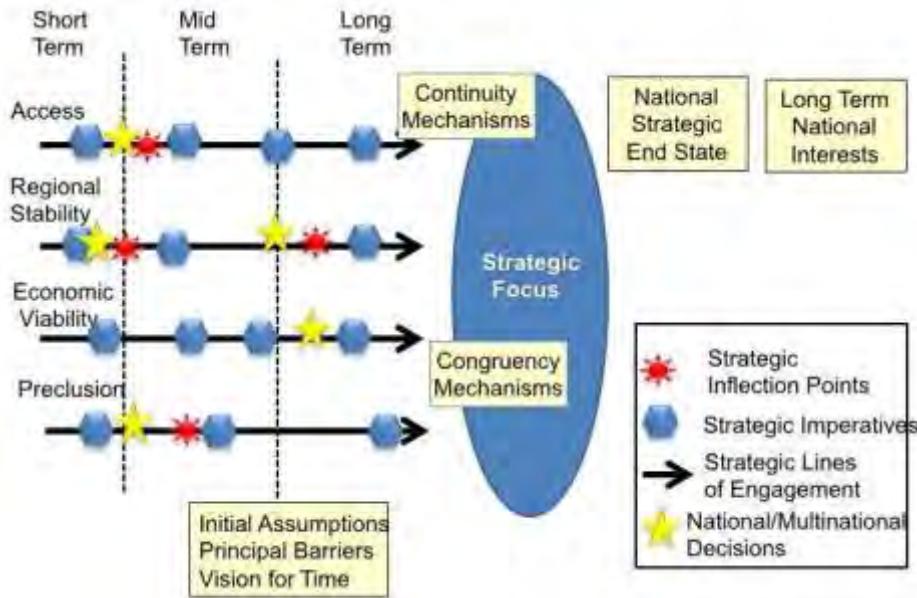
As the design team continues to conceptualize its approach, it identifies strategic inflection points, events that significantly change or necessitate a new strategy; strategic imperatives, milestones that must occur to perpetuate the strategy or prepare for an inflection point; and national or multi-national decision points that anticipate the presence and timing of critical decisions within the design. Strategists also consider continuity mechanisms, elements that sustain the design over time, and congruency mechanisms, elements that enable disparate groups to pursue a single vision.<sup>10</sup> Strategists then represent these elements on a cognitive map, a blueprint for the strategy and its key elements, represented in figure 3.<sup>11</sup> If the design team's objective was to develop a broad strategy to attain advantage within a problem set, the cognitive map's completion may conclude the MDOS methodology's first iteration.

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<sup>9</sup> Reilly, "Strategic Approach Framework."

<sup>10</sup> Jeffrey M. Reilly, "Definitions - Donnellyan@gmail.com - Gmail," April 4, 2017, <https://mail.google.com/mail/u/0/#inbox/15b310cd877a5220>.

<sup>11</sup> Reilly, "Developing a Doctrinal Framework."

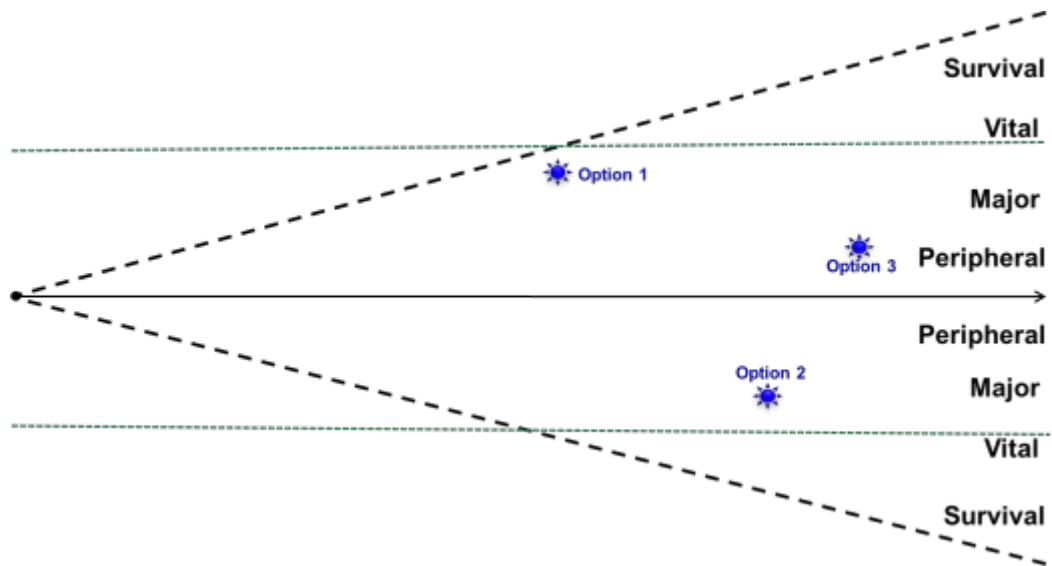


**Figure 3: MDOS cognitive map**

Source: Jeffrey Reilly, "Developing a Doctrinal Framework for Strategic Design," lecture to MDOS seminar, 15 Sept 15.

If required, the design team may continue to develop strategic response options (SRO). SRO are near-term military actions developed in the context of their strategic resource implications and the strategic design; they are not courses of action. Strategic resource implications are requirements, like industrial base mobilization, strategic lift, mobilization requirements, budget resources, and medical preparations that affect the government's ability to conduct operations in other geographic regions. Strategists developing SRO also consider the option's impacts on homeland security, time factors, risks, interagency actions, partner and non-partner participants, and pre-deployment requirements to ensure that, at the strategic level, military actions nest within the strategy and are complementary to other IOP actions. After the design team builds its response options, it maps those options onto the band of tolerance (figure 4) to visually explain the risks to national interest and time horizons for each option.<sup>12</sup> Whether the MDOS method's first iteration ends with the cognitive map or strategic response options, the design team provides decisional and feedback briefings to senior leaders and decision-makers to receive guidance that spurs another iteration of the design.

<sup>12</sup> Reilly, "Strategic Approach Framework."



**Figure 4: Band of tolerance with strategic response options**

Source: Maj Wilford Garvin USA, MDOS student ACSC AY16, adapted from Reilly lecture “Developing a Doctrinal Framework for Strategic Design,” 3 Mar 17.

### Analysis

#### Vision

The MDOS methodology directly incorporates the U.S. BSV as fundamental to how it describes the U.S. environment, understands the problem, and analyzes solutions. It classifies the national interests at risk within a competition using a recognized taxonomy and then seeks to create conditions that improve risks to national interests. The methodology creates a predictive, holistic SV informed by detailed analysis of the present and historical context within, and surrounding, a competition. The cognitive map details an SV that plainly maps critical actions or events along strategic lines of engagement toward the design’s strategic focus, derived from the U.S. strategic desired end state.

The methodology considers the sum of actions across IOP in determining the strategic focus and strategic lines of engagement. Strategists do not break out individual IOP actions until they identify strategic inflection points; then those inflection points use all IOP to create cumulative effects toward the strategic focus. The MDOS methodology is predictive in that it identifies strategic inflection points, events that could force the design to change significantly, based on historical trends or anticipated shocks within the international system. The design uses decisions and strategic imperatives to prepare for

the implications of these shocks as trends as the design shapes conditions for a desirable future.<sup>13</sup>

## Time

The MDOS methodology seeks to create twenty years of advantage within a problem set. The methodology breaks its time horizon into short, mid, and long term to consider the time required to achieve a strategic imperative's effects and the time that the design, or effects within the design, are expected to remain viable.<sup>14</sup>

## Processes

**Problem identification.** The MDOS methodology identifies a competition's problem by analyzing the tension between the U.S. desired strategic end state and that of its adversary, as well as tensions between the U.S. desired strategic end state and the present environment. Strategists further analyze their problem statement to identify problem sets, selecting the problem set that is solvable and offers the possibility of two decades of improved U.S. advantage. The selected problem becomes the focus for developing solutions. This methodology informs subjective value judgments with thorough research and comprehensive analysis of the current and desired environments from the U.S. and competitor's perspectives. Strategists make inferences and assumptions based on historic trends, present conditions, and known future events. Strategists quality check their value judgments by assessing their design's components and outcomes against the band of tolerance to ensure that the design is moving toward "better."<sup>15</sup>

**Solution-oriented.** The MDOS methodology is solution-oriented, in that the design it produces applies cumulative strategic effects to reduce threats to U.S. national interests. The strategic approach, represented in total with a cognitive map and strategic response options, as required, are the methodology's "solution." A design's strategic focus, derived from the desired strategic end state, identifies the critical condition or conditions required to achieve the end state. Within this methodology, the end state is not the solution because the methodology recognizes that strategy has no end state. The

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<sup>13</sup> Reilly, "Developing a Doctrinal Framework."

<sup>14</sup> Reilly, "Developing a Doctrinal Framework."

<sup>15</sup> Reilly, "Strategic Approach Framework."

MDOS SDM instead defines success as improved U.S. position in the international environment. As previously discusses, the MDOS methodology balances known facts with predictions by analyzing the competition’s historic context and then current environment. Strategists identify trends and certain shocks, and infer potential shocks based on trends.<sup>16</sup>

**Integration.** The MDOS methodology integrates and coordinates strategic effects created within each IOP. Strategists use the cumulative effects of strategic imperatives assigned to specific IOP to create cumulative effects along the strategic line of engagement, which ultimately support the design’s strategic focus. Reilly conceptualized the MDOS design team to include experts from agencies across IOP, as well as non-governmental agencies and perhaps international partners. Design team members should provide first-hand expertise across the whole of government and regularly interface with planners at their parent organization to ensure that the design is practical and realistic from the executor’s perspective.<sup>17</sup>

**Iteration.** This methodology incorporates intrinsic and formal iteration mechanisms. As strategist’s move through the steps, they gain insights from their analysis that links to previous and future steps. For example, the process of developing the strategic approach will raise questions that, once answered, modify the team’s understanding of the strategic environment and, perhaps, necessitate modifications to the problem set they seek to solve. Updates in one step then cause revisions in other steps. The MDOS process also incorporates formal brief-backs to senior leaders and decision-makers for their guidance, refinements, and decision, which prompt further iteration.

This methodology also incorporates several monitoring mechanisms that initiate the design’s iteration over time. The design team assign rough timing for strategic imperatives within the strategic approach and signal that the design is, or is not, moving forward along the strategists’ intended path. Strategic inflection points note forecasted events that will likely require the design’s revision unless preparatory conditions are set. As a strategic inflection point nears, strategists can analyze whether their planned

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<sup>16</sup> Reilly, “Strategic Approach Framework.”

<sup>17</sup> Reilly, “Developing a Doctrinal Framework.”

conditions to weather the shock exist and adjust the design if necessary. After a shock, the design team must validate if the design is still viable.<sup>18</sup>

**Level of prescription.** The MDOS methodology produces a prescriptive design. Strategic imperatives are events that are strategically critical along a strategic line of engagement to support the design's strategic focus. National or multi-national decisions incorporated into the design are likewise critical to the design's continuance either by supporting a strategic imperative or in preparing for or responding to a strategic inflection point. Reilly stresses that strategists limit these two design components to critical items to achieve balance between strategic direction and tactical freedom of action. This methodology does not dictate how to achieve a strategic imperative; instead, subordinate strategy and planning teams define "how." It also leaves wide latitudes wherein individual agencies can capitalize on emergent opportunities or dynamic conditions to pursue the design's strategic focus. Widely disseminating the design and specific vision lend to preventing individual agencies from inadvertently working at cross-purposes as they execute the design and their specific plans.<sup>19</sup>

### **Methods for communication and collaboration**

The MDOS methodology incorporates collaborative products, prescriptive products, and feedback and decisional products. The collaborative products include figures 1-4, pictorial representations of the observed and desired systems, and graphs intended to demonstrate trends about a strategic response option interaction with the national interest band of tolerance over time. These products provide strategists' reference throughout the process and facilitate applying different lenses to their analysis when translating an idea into a picture. Figure 3, the strategic approach, and strategic response options are the primary prescriptive products. Figure 3, strategic response options, and a completed band of tolerance sketch serve as feedback and decisional products that represent the drafted design to decision-makers and outsiders. This methodology employs an extensive, specific lexicon which, when able, draws on existing

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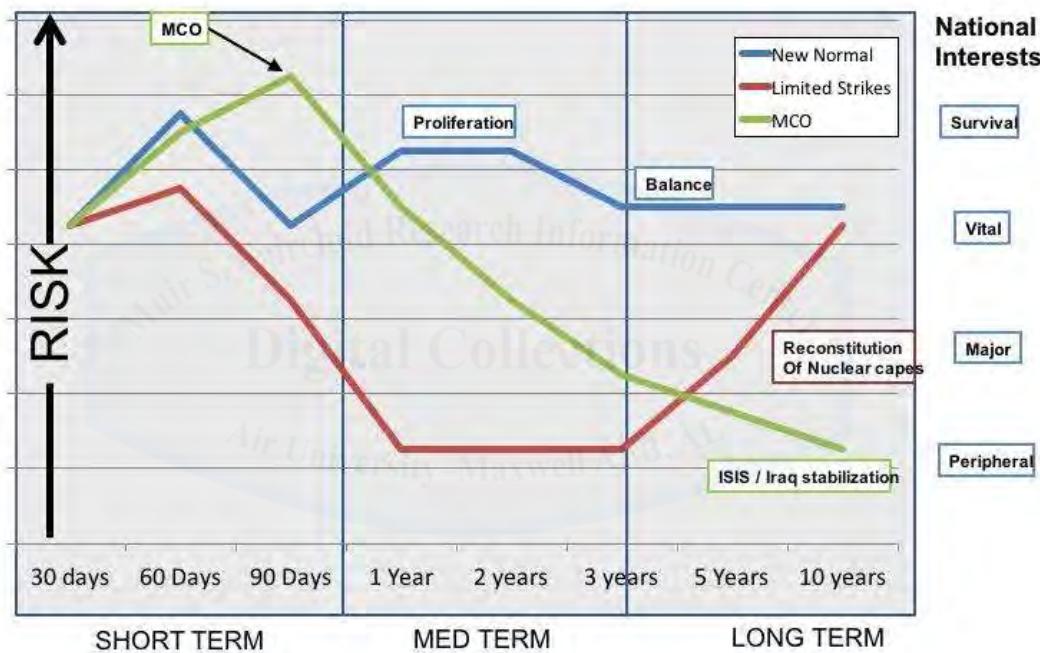
<sup>18</sup> Reilly, "Strategic Approach Framework."

<sup>19</sup> Reilly, "Strategic Approach Framework."

design terminology; however, that terminology is largely rooted in military design techniques and may not be familiar to a wider audience.<sup>20</sup>

### Risk Assessment

Throughout the MDOS methodology, strategists assess and seek to reduce risk to national interests and to the strategic end state. They depict and analyze risk assessment and mitigation over time in the band of tolerance chart. Figure 5 is an example depiction of this analysis. Strategic inflection points are externally imposed risks, which strategist mitigate through strategic imperatives and decisions. Strategic response options also include risk assessment, specifically identifying strategic-level risks across IOP.<sup>21</sup>



**Figure 5: Strategic Response Option Comparison**

Source: Jeffrey Reilly, "'A' Strategic Approach Framework," lecture to MDOS seminar, 29 Sept 15.

### Summary

The MDOS SDM leverages the U.S. BSV to create an SV that integrates all elements of power to create conditions suitable for “continuing advantage” within a problem set.<sup>22</sup> That SV is both predictive and holistic. The methodology’s time horizon

<sup>20</sup> Reilly, “Strategic Approach Framework.”

<sup>21</sup> Reilly, “Strategic Approach Framework.”

<sup>22</sup> Dolman, *Pure Strategy*, 6.

looks twenty years into the future, seeking to shape conditions throughout that timeframe that reduce a threat to national interests. Both the strategic approach and strategic response option development process account for, and represent, the time to achieve effects and the amount of time the design expects strategic effects to remain viable.

This methodology expands beyond focusing on a critical problem to identify problem sets, from which strategists select a focus problem. It recognizes the systemic linkages of the problem and incorporates those into the design. Strategists make subjective value judgments informed by comprehensive research and detailed analysis of the current and desired situations, and historical events and trends. The MDOS methodology translates the problem into a solution through a strategic approach and strategic response options. The approach and response options support the strategic focus, which is the crux of the solution. The MDOS SDM roots predicted events and effects in present conditions and historical trends that allude to those events' or effects' likelihood.

The methodology integrates strategic effects generated across the IOP to support the design's strategic focus. The MDOS SDM creates an integrated design team, incorporating experts from IOP, non-governmental, and partner organizations to inform the design process and interface with their planning counterparts. The MDOS methodology's steps are iterative and interactive internal to the development process but the methodology also incorporates formal feedback and decisional briefs that prompt additional iteration. The methodology is prescriptive in terms of the end state, focus, and critical actions required to attain those. It does not prescribe how individual IOP agencies must complete critical actions. The MDOS methodology is careful to leave space for individual organizations to capitalize on emergent opportunities or advantages that support the strategic focus but tempers the likelihood that IOP could work at cross-purposes by establishing a holistic vision. Concluding my assessment of the MDOS SDM as the final methodology that my research compares, the next chapter conducts a horizontal analysis of each of my model's elements to determine which methodology is the most complete strategic design methodology.

## Chapter 6

### Assessment

This chapter uses the data gathered in chapters three, four, and five to compare net assessment, scenarios and strategic conversations, and the Multi-Domain Operational Strategist (MDOS) Strategic Design Method (SDM) and assess their value and utility as a strategic design methodology. The chapter's sections reflect my comparative model's primary elements. Each section begins with a table that summarizes data for each methodology, which informs the analysis in that section. The element assessments will highlight the strengths, weaknesses, and possible applications for each methodology and will conclude by identifying which methodology best represents the element under assessment. The chapter concludes by identifying the most complete methodology.

### Vision

The assessment begins with vision. Remember that vision is both a methodology's ability to incorporate the U.S. broad strategic vision (BSV) and its ability to produce a specific vision (SV) that is holistic and predictive and communicates how to solve a problem. Table 2 summarizes each methodology's vision data as a jumping off point to identify each methodology's strengths and weaknesses in this area.

Table 2: Vision			
	Net Assessment	Scenarios and Strategic Conversations	MDOS Strategic Design Methodology
Broad Strategic Vision	-U.S. broad strategic vision defines competitor's within long-term competition framework	-Could provide foundation for scenario development -Method can be applied at this level to identify future challenge areas for the broad vision	-Uses broad strategic vision to refine understanding of "better" by applying taxonomy to classify intensity.
Specific Strategic Vision	-Well defined problem, highlights asymmetries -Points strategist toward "what" to address not "how" to address it -Holistic approach includes organization and individual logic -Predictions based on trends and inferred asymmetries	-Can contribute to developing, or be applied within, a specific vision -Holistic view of decisions and issues -Not predictive. Perceives possible futures and prepares leaders to make informed decisions within those futures.	-Specific vision is strategic approach -Holistic. IOP effects are considered cumulatively. -Predicts IOP effects within a conflict's context, considered against known and projected shocks and trends.

*Source: Author's original work*

Net assessment's primary strength in vision is identifying asymmetries in a long-term competition. Highlighting areas where advantage or disadvantage does, or could, exist provides decision-makers and strategists with a range of options to influence the competition's structure to exploit or mitigate asymmetries.<sup>1</sup> A secondary, and unique, strength is that net assessment includes organizational and individual logic in identifying asymmetries.<sup>2</sup> No other method expressly considers those factors. This methodology's greatest weakness in vision is that it does not truly create a detailed and authoritative SV for action within the competition. Strategists must choose which asymmetries to address in their strategy and then develop an SV for the strategy separate from the net assessment process.

Scenarios and strategic conversations' SV supports informed decision-making in the present and the future. This methodology creates an SV for each scenario and demonstrates how a present decision could affect the future.<sup>3</sup> Facilitating informed decision-making is a strength because it allows an organization to successfully maintain a course within the context of an uncertain future. However, scenarios and strategic conversations require an existing vision within which to operate. An organization needs an existing strategy as a backdrop to develop possible futures. This methodology does not define "better" or give preference to one scenario over another. In effect, it does not create an SV as defined in chapter two.

The MDOS SDM, however, best fulfills the model's vision criteria. This methodology has several strengths across the BSV and SV sub-elements. It defines "better" in relation to national interests, keeping strategists closely linked with national purpose throughout the process. It defines the key condition that will support improved advantage, the strategic focus. The MDOS SDM specific vision is simultaneously prescriptive and flexible. By identifying the strategic end state and strategic focus, the

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<sup>1</sup> Andrew Marshall, "The Nature and Scope of National Net Assessment," April 10, 1973, 1, 3, Box H-199, Richard Nixon Presidential Library and Museum, [http://www.nixonlibrary.gov/forresearchers/find/textual/institutional/finding\\_aid.pdf](http://www.nixonlibrary.gov/forresearchers/find/textual/institutional/finding_aid.pdf).

<sup>2</sup> Andrew F. Krepinevich and Barry D. Watts, *The Last Warrior: Andrew Marshall and the Shaping of Modern American Defense Strategy*, First edition (New York, NY: Basic Books, 2014), 254–56; Marshall, "The Nature and Scope of National Net Assessment," 2.

<sup>3</sup> Peter Schwartz, *Inevitable Surprises: Thinking Ahead in a Time of Turbulence* (New York, NY: Gotham Books, 2004), 11; Peter Schwartz, *The art of the long view: paths to strategic insight for yourself and your company* (New York, NY: Bantam Doubleday Dell Pub. Group, 1996), 236–37.

methodology provides a guide for all actions within the design but also for emerging opportunities that an individual agency can exploit. The MDOS SDM's ability to create a predictive and holistic vision is a strength, but also its greatest potential weakness. Strategists risk driving toward a failing vision if they do not closely monitor the environment and the design's progression over time. Another weakness is that the level of detail in the SV may be too finite for a broad competition.<sup>4</sup>

Net assessment provides a clear vision of the problem and asymmetries but does not prescribe actions. Scenarios and strategic conversations provide a vision that supports effective decision-making but does not drive toward a desirable future. The MDOS SDM is the only methodology that provides the type of SV desired for a strategic design methodology, one that is predictive, holistic and serves as an enduring guide for subordinate agencies planning and actions.

### Time

My assessment now turns to the element of time. Time, within the comparative model, includes the methodology's time horizon, how far into the future it looks, and how the methodology considers or accounts for a design's duration of viability. Table 3 reviews each methodology's time data to springboard into the assessment, focusing again on each methodology's strengths and weaknesses.

Table 3: Time			
	Net Assessment	Scenarios and Strategic Conversations	MDOS Strategic Design Methodology
Time Horizon	10 years	10-25 years. Tailored to the critical decision/issue under analysis.	20 years
Duration of Viability	-Assumes 10 years to achieve effects -Does not account for time to remain viable	-Not formally accounted for -Provides insight into strategy-derailers	-Considers time to achieve effects and the time the design will remain viable

*Source: Author's original work*

Net Assessment's strength in time is the focus and detailed analysis it applies to its ten-year time horizon. While it has the shortest time horizon, this time horizon limits the number of unpredictable events that can affect the assessment and provides the opportunity for more certainty in its trend assessment. Net assessment's greatest

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<sup>4</sup> Jeffrey M. Reilly, "Developing a Doctrinal Framework for Strategic Design" (presented at the MDOS lecture, Air Command and Staff College, Maxwell AFB, AL, September 15, 2015).

weakness within the time element is assuming that strategic decisions made in the present will achieve effects a decade into the future, predisposing net assessors to under-prioritize the immediate effects of present decisions or actions, opening the door for unforeseen factors that derail strategy or result in environmental changes.<sup>5</sup>

Scenarios and strategic conversations have the longest potential time horizon and can create inferences to identify duration of viability. Its strength is the flexibility of its time horizon, which strategists can tailor based on the issue or decision they are analyzing.<sup>6</sup> However, the scenarios and strategic conversations methodology does not formally consider time to achieve effects or the time a design will remain viable, which is a weakness. Further, as strategists extend this methodology's time horizon toward twenty-five years, they invite greater uncertainty into the process. Scenarios and strategic conversations mitigate this risk by considering multiple scenarios without giving preference to one possible future over another.

The MDOS SDM has a broad outlook with the intent of creating the conditions to achieve twenty years of better peace. This methodology considers time to achieve effects for the design and its action components, as well as the duration the design will remain viable. As mentioned in scenarios and strategic conversations, longer time horizons, like the twenty-year horizon in this methodology, increases the uncertainty inherent to the design. The MDOS SDM mitigates this risk by purposely breaking the time horizon down into short-, mid-, and long-term actions, highlighting the increase of uncertainty to the strategists developing the design. By dividing the time horizon as described, strategists are better able to consider time to achieve effects in the design. Further, the MDOS SDM attempts to predict and mitigate shocks that could force the design to change, reinforcing the design's long-term viability.<sup>7</sup>

The MDOS SDM best fulfills the comparative model's element of time. While net assessment's time horizon creates more certainty than the longer time horizons, the MDOS SDM attempts to mitigate the effects of uncertainty in its twenty-year outlook. I

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<sup>5</sup> Krepinevich and Watts, *The Last Warrior*, 103–4.

<sup>6</sup> Peter Schwartz, Peter Leyden, and Joel Hyatt, *The Long Boom: A Vision for the Coming Age of Prosperity* (Cambridge, MA: Perseus Publishing, 2000), vi; Schwartz, *Inevitable Surprises*, 12; Schwartz, *The art of the long view*, 18–22, 53.

<sup>7</sup> Reilly, “Developing a Doctrinal Framework.”

value the MDOS SDM's over net assessment's time horizon because the longer time horizon incorporates more shocks and trends, creating a more depth in the specific vision and accounting for more security changes that could derail the design.

### **Process**

The assessment now moves into the process element, which breaks apart a methodology's processes to describe problem identification, solution-orientation, integration, iteration, and the methodology's level of prescription. As in previous sections, this section will highlight strengths and weaknesses of each methodology in driving toward a final assessment. Processes are complicated and assessing this element requires more subjective value judgment than any other in the comparative model. To that end, I will consider both a methodology's completeness in a sub-element, like problem identification, against the quality or uniqueness of the methodology's data in that area. Additionally, this section's organization is slightly different from the previous assessment areas. I will analyze each methodology within the sub-elements and conclude with an overall evaluation. The overall goal is to identify the methodology whose processes best support developing an effective strategic design. Table 4 reviews each methodology's process data as a jumping-off point for the assessment.

**Table 4: Process**

	Net Assessment	Scenarios and Strategic Conversations	MDOS Strategic Design Methodology
Problem Identification	-Focuses on critical problem -Subjective value judgements based on dispassionate balance comparison	-Focuses on critical problem based on self- and external reflections	-Problem identified based on desired end states and current environment. -Solvable problem sets that achieve advantage
Solution-Oriented	-Does not produce solutions	-Does not produce solutions	-Creates strategic effects that improve problem set conditions toward “better”
Integration	-Holistic approach ~12 person assessment team	-Integrated – considers whole picture surrounding an issue. -Initial group, working groups, workshops	-Integrated – creates cumulative effects toward strategic focus -Diverse design team
Iteration	-Continuous search for right question -Mechanisms: supervisor intervention, questioning metrics and assumptions -Incorporates feedback from policy maker	-Interaction between initial issue and line of questioning, the scenarios, and diverse feedback. -Uses leading indicators as monitoring mechanisms	-Natural discourse between understanding the environment, problem sets, and the strategic approach -Formal feedback and monitoring mechanisms
Level of Prescription	-No milestones -Supports decision and strategy making	-Considers what could be done, not what must be done	-Uses milestones to note actions required to achieve advantage -Design drives toward strategic focus and end state

*Source: Author's original work*

The first sub-element in process is problem identification. All three methodologies stress finding the right, or most critical, problem or issue and provide a process to support that. Net assessment is, self-admittedly, designed to diagnose a problem, making it a strong performer in this sub-element. Its strength is its use of a wide variety of logical, analytical, and comparative mechanisms to hone in on the critical problem and asymmetries.<sup>8</sup> Scenarios and strategic conversations have a unique start point, self- and organizational reflection, to conceptualize problem areas. The reflection process encourages a strategist to separate out their cognitive biases and individual frame to uncover new, hidden problems.<sup>9</sup> The MDOS SDM identifies a problem by comparing the strategists understanding of the desired system and current environment. The MDOS SDM's differentiating characteristic, and its strength, is in simultaneously expanding and refining that problem into problem sets, focusing on the problem set that offers an

<sup>8</sup> Marshall, “The Nature and Scope of National Net Assessment,” 2, 5; Krepinevich and Watts, *The Last Warrior*, 250, 254–56.

<sup>9</sup> Schwartz, *The art of the long view*, 59, 241.

attainable advantage and movement toward the U.S. desired end state.<sup>10</sup> All three methodologies make subjective value judgments using a variety of analytical methods, but no one outperforms the other.

The MDOS SDM performs best at problem identification partially because its process incorporates elements of net assessment's and scenarios and strategic conversation's identification processes. The MDOS SDM has the strongest problem identification process because it considers "where we are," "where we want to go," and "what is our adversary's vote" in defining the problem and then it expands that problem to a systemic level to find a way to make gains within the problem set.

The MDOS SDM is the only methodology that is truly solution-oriented within the identified problem.<sup>11</sup> Net assessment identifies elements that are critical to effective strategy, a strength, but lacks a method to translate the problem into a solution; it does not develop a strategy.<sup>12</sup> Similarly, scenarios and strategic conversations closely aligns informed decision making with solutions in its method; it lacks a framework to translate scenario insights into strategy.<sup>13</sup>

Processes' third sub-element is integration, which relates to how a methodology applies the IOP and the structure of its design team. All three methodologies espouse a holistic, or integrated, approach in its processes and a wide variety of skill sets and experience bases within its design team, albeit the teams look different across each methodology. Net assessment's strength in integration is its relatively tight control over who works on and interacts with the design team.<sup>14</sup> This restrictive stance increases the likelihood that the team will remain within the methodology's bounds and makes quality control, of both information in and information out, easier. The drawback, though, is that in limiting the number of external entities that interact with the assessment team, this

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<sup>10</sup> Jeffrey M. Reilly, “A’ Strategic Approach Framework” (presented at the MDOS lecture, Air Command and Staff College, Maxwell AFB, AL, 29 Sept 15).

<sup>11</sup> Reilly, “Strategic Approach Framework.”

<sup>12</sup> Paul Bracken, “Net Assessment: A Practical Guide,” *Parameters* 36, no. 1 (Spring 2006): 97.

<sup>13</sup> Schwartz, *The art of the long view*, 46–59.

<sup>14</sup> Eliot A. Cohen, “Net Assessment: An American Approach,” 22, accessed November 28, 2016, <http://www.aaronbfrank.com/wp-content/uploads/2011/11/Net-Assessment-An-American-Approach-Cohen.pdf>; Krepinevich and Watts, *The Last Warrior*, 101–2.

methodology limits diversity in perspectives and insights that can be critical to effective strategic design.

Scenarios and strategic conversations has the best formal and informal information sharing mechanisms across the totality of an organization, in fact, seeking to reach every corner of an organization for feedback and buy-in. It establishes formal entities that represent several levels of leadership and incorporate outsiders.<sup>15</sup> The methodology's weakness in integration is that there is no way for the comparative model, and by extension a strategist, to extrapolate how well the insights and decision preparation that come out of scenarios would translate into strategy.

The MDOS SDM demonstrates the strongest performance in integration through its distinct focus on integrating IOP and the design team from conceptualization through execution. Another strength is that the methodology explicitly expects strategists to interface with agency planners, those who will execute the strategy, throughout the design process. The MDOS SDM's weakness, in particular, relative to the scenarios and strategic conversation methodology, is that it places more reliance on formal communication networks potentially limiting buy-in at lower levels.<sup>16</sup> Having established the MDOS SDM as the most integrative, we move to assessing iterative mechanisms.

Iteration has two key indicators: the problem-solution conversation and incorporating external forces. All three methodologies use the interaction between how strategists understand the problem and the implications they assess to create an iterative dialogue between problem and solution, as defined by the methodology. All of the methodologies also include external intervention and feedback in their iterative mechanisms. Understanding that these potential strategic design methodologies employ the same general mechanisms to iterate both problem refinement and solution development alludes to the differentiating characteristics in incorporating external forces.

Net assessment is the weakest methodology at incorporating external forces. Decisional inputs and feedback come only from the assessment's supervisor and user – in

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<sup>15</sup> Schwartz, *The art of the long view*, 228–30, 233, 235–36.

<sup>16</sup> Reilly, “Developing a Doctrinal Framework.”

the Office of Net Assessment's case, the Secretary of Defense.<sup>17</sup> It does not incorporate monitoring mechanisms to enlighten when reassessment is required or how its predictions develop in reality.

Conversely, scenarios and strategic conversations incorporate “leading indicators” that signal which scenario most closely aligns with emerging reality to prime decision makers for likely near-term decisions.<sup>18</sup> The methodology also incorporates a broad range of feedback and perspective inputs to refine existing scenarios and identify areas where for new scenario work, making the methodology both iterative and continuous.<sup>19</sup> Similarly, the MDOS SDM incorporates formal mechanisms for decisions, course corrections, and refinements and includes monitoring mechanisms that signal success, failure, or the need to adapt the design.<sup>20</sup> The scenarios and strategic conversations methodology’s desire to make the process continuous and expansive outweighs the MDOS SDM’s completeness in iteration because scenarios and strategic conversations continue beyond a present issue.

Process’s sub-elements conclude with defining a methodology’s level of prescription. Like the solution-oriented sub-element, the MDOS SDM is the only methodology that fulfills both prescription indicators. Net assessment is diagnostic, not prescriptive, does not include milestones or a road map, and does not define “what must be done.”<sup>21</sup> Scenarios and strategic conversations are anticipatory, not prescriptive. The methodology considers the implications of immediate decisions for the future but does not use milestones to shape it.<sup>22</sup> The MDOS SDM uses strategic imperatives and decision points to create conditions that support the design’s strategic focus and end state. It uses imperatives and decision points to create effects that achieve advantage without overly restricting freedom of action for subordinate agencies and organizations to capitalize on emerging opportunities while remaining within the design’s vision.<sup>23</sup>

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<sup>17</sup> Cohen, “Net Assessment: An American Approach,” 22; Krepinevich and Watts, *The Last Warrior*, 58.

<sup>18</sup> Schwartz, *The art of the long view*, 246–47.

<sup>19</sup> Schwartz, *The art of the long view*, 57, 234–35.

<sup>20</sup> Reilly, “Strategic Approach Framework.”

<sup>21</sup> Krepinevich and Watts, *The Last Warrior*, 104.

<sup>22</sup> Schwartz, *The art of the long view*, xv, 9, 246.

<sup>23</sup> Reilly, “Developing a Doctrinal Framework.”

Overall, the MDOS SDM performs best in the process element. Aside from being the only methodology to possess all indicators of effective strategic design, the methodology clearly links all process sub-elements to arrive at an integrated solution, balanced with reality and in its level of prescription, that solves a critical problem.

### **Communication and Collaboration**

The communication and collaboration element defines the mechanisms employed by each strategic design methodology to facilitate communication and collaboration within the design team and between the team and external entities. This element has three indicators. First, the model looks for prescriptive products that communicate a design externally as a prescription for action. Second, the model looks for feedback and decisional products that seek guidance or concurrence internal to the design team or from external entities. Finally, the model identifies if a methodology employs a specific lexicon that strategists must use when designing. Table 5 summarizes communication and collaboration indicators for each methodology.

<b>Table 5: Communication and Collaboration</b>		
Net Assessment	Scenarios and Strategic Conversations	MDOS Strategic Design Methodology
<ul style="list-style-type: none"> <li>-Few links outside of the assessment office</li> <li>-No prescriptive products</li> <li>-Feedback and decisional products: the written assessment, internal review process, wargames and scenarios</li> <li>-No unique lexicon</li> </ul>	<ul style="list-style-type: none"> <li>-No prescriptive products</li> <li>-Feedback and decision support products: stories</li> <li>-Some specific lexicon for scenario components</li> <li>-Scenarios use plain or industry-specific language</li> </ul>	<ul style="list-style-type: none"> <li>-Prescriptive products: strategic approach, strategic response options</li> <li>-Variety of collaborative products including the prescriptive and environmental descriptions</li> <li>-Extensive lexicon within methodology</li> </ul>

*Source: Author's original work*

Net assessment has a single product, the assessment; it is not prescriptive. Net assessment's communication and collaboration primarily occurs within the assessment team. External inputs, regarding feedback and decisions, come only from the assessment's user and the team's supervisor. This methodology's strength lies in the dynamic collaboration mechanisms it employs wargames and scenarios. While the written assessment may have but a few drafters, wargaming and scenario development offer easy opportunities to broaden both the assessment team and their perspectives on

the problem.<sup>24</sup> Net assessment does not have a methodology-specific lexicon, which is a strength because it keeps the methodology accessible for a wide variety of settings.

Like net assessment, the scenarios and strategic conversations methodology has but one output, stories. The scenarios, or stories, are not prescriptive but do support feedback, via working groups and workshops, and future decisions.<sup>25</sup> The scenario and strategic conversation's collaborative environment is the most dynamic among the three methodologies. This methodology seeks feedback on scenarios and possible decisions across an organization's breadth and depth, trying to include as many people as possible. The use of multi-level working groups and workshops is this methodology's strength in communication and collaboration.<sup>26</sup> Scenarios and strategic conversations have a limited lexicon, specifically in identifying a scenario's elements and retain the ability to incorporate plain or industry-specific language easily – another strength.<sup>27</sup>

The previous two methodologies lack prescriptive products and have a limited number of decisional and feedback products; however, the MDOS SDM is quite the opposite. It produces two prescriptive products that vary in specificity and scope and provide foundational direction for follow-on strategy and planning efforts. The methodology's feedback and decisional products and processes seek guidance and concurrence from the policymakers or other senior leaders throughout the design process. These products also facilitate feedback between the design team and subordinate planning cells to keep the design grounded and to facilitate early planning efforts. The methodology's extensive use of communicative and collaborative products is its strength in this element; its extensive lexicon is its weakness. While strategists, particularly military strategists, will find some of the lexicon familiar, the majority is new or newly applied.<sup>28</sup>

Net assessment's and scenario and strategic conversation's lack of prescriptive products weakens both as strategic design methodologies. The MDOS SDM is the only methodology that includes the span of products desired to develop a strategic design

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<sup>24</sup> Cohen, "Net Assessment: An American Approach," 18–19.

<sup>25</sup> Schwartz, *The art of the long view*, 4, 38.

<sup>26</sup> Schwartz, *The art of the long view*, 228–30, 233, 235–36.

<sup>27</sup> Schwartz, *The art of the long view*, 101–48.

<sup>28</sup> Reilly, "Strategic Approach Framework"; Reilly, "Developing a Doctrinal Framework."

effectively. While the MDOS SDM has a significantly more extensive lexicon than the other two methodologies, that complexity does not outweigh the lack of products in net assessment and scenarios and strategic conversations.

### Risk Assessment

My assessment now turns to risk assessment. This element looks for two indicators, how the methodology assesses and mitigates risk. Table 6 reviews each methodology's risk assessment data to springboard into the assessment, focusing again on each methodology's strengths and weaknesses.

Table 6: Risk Assessment		
Net Assessment	Scenarios and Strategic Conversations	MDOS Strategic Design Methodology
<ul style="list-style-type: none"> <li>-Identifies risk's components</li> <li>- uncertainties, disadvantageous asymmetries, emerging threats</li> <li>-Does not classify levels of risk</li> <li>-Conceptualizes but does not formalize mitigation steps</li> <li>-Actual risk mitigation falls on the strategist applying the assessment</li> </ul>	<ul style="list-style-type: none"> <li>-Considers decisions in highest risk environments</li> <li>-Does not identify these environments as high risk</li> <li>-Does not formally address mitigation</li> <li>-Indicators highlight which risks might be approaching as the future plays out</li> </ul>	<ul style="list-style-type: none"> <li>-Risk assessment through inflection points.</li> <li>-Specific risk assessment within each response option</li> <li>-Imperatives and decision points mitigate risks of an inflection point</li> </ul>

Source: Author's original work

Net assessment identifies elements that cause risk, uncertainty, asymmetrical disadvantage, and emerging threats but is only suggestive in how to mitigate those risks, demonstrating the methodology's lack of prescription.<sup>29</sup> Strategists must assess risks and then select appropriate mitigation measures, perhaps outside of the conceptualized mitigation that net assessment considers.

Scenarios and strategic conversations include a risk assessment process, though Schwartz does not label it as such. When developing scenarios, strategists examine and rank a range of issues, selecting the most uncertain and critical to form the scenario's

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<sup>29</sup> Krepinevich and Watts, *The Last Warrior*, 181.

foundation, effectively building each scenario in the highest risk environments.<sup>30</sup> Risk assessment is this methodology's strength and risk mitigation is its weakness. While it does support risk mitigation by considering decisions with high-risk environments and by identifying indicators to signal, which risks may be approaching on the horizon, it does not take steps to avert risks. It does not seek to create conditions to reduce or preclude a risk.

The MDOS SDM conducts risk assessment throughout its design process. Strategists prioritize risks against by ability to thwart the design. The design team notes the detrimental risks on the design as inflection points and creates mitigation measures using strategic imperatives and decision points. Strategists also conduct a formal risk assessment while developing strategic response options.<sup>31</sup> If the goal line for risk assessment is both identifying and reducing risks within a strategy, the MDOS SDM is the only methodology that scores.

## Conclusion

The MDOS SDM clearly outperforms net assessment and scenarios and strategic conversations across the comparative model's elements. Beyond the direct indicators that the comparative model looks for, the MDOS SDM adds layers of nuance, which reinforce its ability to both define a specific vision and guide broad actions toward a better peace. For example, its use of taxonomy to classify the intensity of national interests threatened in a competition and map the potential changes to that intensity based on the vision and response options provides strategists and decision-makers a defined link between national interests and outcomes, and an increased ability to prioritize actions and resources across competitions. Another significant but subtle nuance is the methodology's use of both a strategic end state and strategic focus in creating a strategic approach. The end state defines what the problem looks like when solved and the strategic focus identifies a critical element or condition that enables the solution; thus, providing a solid basis for follow-on planning. The MDOS SDM also leaves a wide berth for strategists to incorporate other strategy mechanisms, like scenarios, narratives, and net assessment, throughout the process.

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<sup>30</sup> Schwartz, *The art of the long view*, 243.

<sup>31</sup> Reilly, "Strategic Approach Framework."

The MDOS SDM thematic weakness is that it relies on accurate data and analysis, which is a common theme across all the methodologies and is unavoidable in developing strategy. Another weakness is the MDOS SDM's complexity; it is not a methodology a strategist can master in a two-day training course. It requires an extensive introductory course, practice, and experience to implement effectively.

While net assessment and scenarios and strategic conversations do not possess the mechanisms to produce a strategic design, they each offer capabilities that are critical in developing an effective strategy or strategic design. Net assessment's methodology provides a framework and insights into diagnosing a problem's core and to identify and conceptualize asymmetries and exploitations. Even the broad idea of conducting balance assessments to identify asymmetries and opportunities is valuable. Scenarios and strategic conversations are valuable decision-support tools that afford leaders the opportunity to support their strategy's continuance with informed decisions. The wide audiences for strategic conversations offer a framework for continuous strategy-review.

This chapter compared the elements of net assessment, scenarios and strategic conversations, and the MDOS SDM to assess the most complete strategic design methodology and to highlight the strengths and weaknesses of each methodology. All three methodologies offer useful tools that support strategy development, but the MDOS SDM is the only methodology that meets the intent of strategic design as I conceptualized in Chapter one.

## Chapter 7

### Conclusion

#### **Review the Problem and Proposed Solution**

The U.S. twenty-first century national security environment will be fraught with complexity. Challenges are likely to arise from both state and non-state actors, employing unconventional techniques short of conventional war to achieve their international aims. Conflicts will blur traditional state lines, either occurring at the sub-state or international level, creating additional challenges for strategists. An overreliance on the military instrument of power further complicates the national security situation.

Unfortunately, the United States' (U.S.) existing national security strategy documents and processes are ill-suited to address this uncertainty and complexity for two reasons. First, existing strategy processes are linear and do not inspire the creative thinking and synergy required to achieve an executable whole of government strategy. Second, the *National Security Strategy* (NSS), despite assertions that it is our only whole of government document, is not a strategy because it lacks focus and detail, particularly with resource allocation and specific actions. To attain synchronized and integrated operations below the NSS-level, the U.S. needs to embrace a strategy-development method that integrates instruments of power (IOP) below the grand strategy-level. The problem then is that the U.S. does not have an effective mechanism to translate grand strategy and strategic-level guidance into a strategy that provides this integration.

My research offers strategic design as one possible solution to this problem. Strategic design, as envisioned in this project, occurs at the strategic-level and focuses on integrating all of the IOP to establish policy or respond to a national security problem.<sup>1</sup> It provides “a methodology for applying critical and creative thinking to understand, visualize, and describe complex, ill-structured problems and develop approaches to solve them.”<sup>2</sup> The strategic design methodologies explored in this work provide a framework

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<sup>1</sup> Joint Publication 1-02 *Department of Defense Dictionary of Military and Associated Terms*, 8 November 2010, defines the strategic level of war as “The level of war at which a nation, often as a member of a group of nations, determines national or multinational (alliance or coalition) strategic security objectives and guidance, then develops and uses national resources to achieve those objectives.”

<sup>2</sup> Department of the Army, *FM 5-0*, 3–1.

for how the interagency committees described in Chapter one formulate responses to specific strategic challenges.

The strategic design process and its output, a vision or concept of action, directly addresses one of Biddle's central warnings, "That coherence (in grand strategy) must emerge from a domestic interagency process that has its own competitive dynamics and serious challenges of communication flow."<sup>3</sup> Design offers a method to develop a unified vision that transcends agency-specific interests that can overtake policy and strategic guidance processes because the design team will be able to frame and reframe the problem across each interest to identify best outcomes and pitfalls.

### **The Comparative Model**

I synthesized strategy and design literature to deduce the elements of a comparative model for strategic design methodologies which centers around vision, time horizons and continuance, the methodology's process, the methodology's methods for communication and collaboration, and risk assessment.

Vision is a two-part component to the comparative model. First, strategic design must root in the broad vision created by national purpose, national interests, and the policies those create. Second, the strategic design must create a specific vision that is holistic, solution-oriented, and predictive.

With respect to time, my comparative model seeks to identify the methodology's concept of time horizon, how far the methodology requires the strategist to look beyond the present without becoming obscurely predictive of a future that is unknowable. Another way to view this component is how well the methodology inspires strategists to ask and answer "and then what" within the design they develop. The second element involving time is to determine how the methodology accounts for the duration of a design's viability. Establishing duration of viability, both in terms of the time required to achieve the design's desired effects and in terms of the long-term durability of the design, should reinforce the methodology's mechanisms for forward-looking and highlight periods of critical vulnerability within the design.

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<sup>3</sup> Biddle, "Strategy and Grand Strategy: What Students and Practitioners Need to Know," 39.

Lawson's analysis of design thinking and processes concludes that there is no single, correct process for design.<sup>4</sup> However, design and strategy theory detail characteristics that should be present within a strategic design methodology to produce an effective strategy. The comparative model analyzes processes for each methodology in terms of problem identification, solution focus, integration, iteration, and level of prescription.

The comparative model will assess each strategic design methodology's approach to communication and coordination by identifying what mechanisms it employs to translate ideas into action, to seek feedback and decisions from principals, and to generally represent the design. The model uses terms discussed in Chapter two to classify the mechanisms, for example, reflective, decisional, feedback seeking, and prescriptive.

Finally, my comparative model for strategic design assesses how each methodology treats risk, in terms of risk assessment and risk mitigation. Stolberg explains that some governments have informal risk assessment methods that seek external input to determine spoilers and modifiers and others have formal risk assessments.<sup>5</sup> The comparative model will include whether the risk assessment and mitigation process is formal or informal.

### **Assessing the Methodologies**

I used my comparative model to analyze net assessment, scenarios and strategic conversations, and the Multi-Domain Operational Strategist's Strategic Design Method (MDOS SDM) for their viability as strategic design methodologies. I selected these methodologies because they represent a range of viewpoints and origins and are at least vaguely familiar to strategy students.

Net assessment is a long-standing process that the U.S. Department of Defense leverages to inform strategy decisions. The Department's Office of Net Assessment is credited with, among other things, identifying the economic component of the U.S.-Soviet Cold War arms race that eventually lead to the Soviet's fall, China's rise as a

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<sup>4</sup> Lawson, *How Designers Think*, 123.

<sup>5</sup> Stolberg, "How Nation-States Craft National Security Strategy Documents," 109.

strategic competitor to U.S. hegemony, the revolution in military affairs, and weapons proliferation.<sup>6</sup>

Author Peter Schwartz targeted the business sector when he published *The Art of the Long View* in 1991, detailing his scenario and strategic conversation methods. Schwartz subsequently published works that apply his methodology to worldwide political, economic, social, technological and informational trends, as well as the rise of China.<sup>7</sup>

At the USAF Air Command and Staff College (ACSC), the Director of Joint Education, Dr. Jeffrey Reilly, developed the MDOS strategic design methodology; he teaches it as part of the MDOS elective at ACSC. The MDOS SDM is an adaption of Dr. Reilly's operational design methodology but he specifically constructed it to develop strategy at the strategic and policy levels.

Chapters three, four, and five contain my detailed analysis of each methodology. Table 7 summarizes my findings, highlighting how each methodology interacts with my model's elements and sub-elements.

**Table 7: Summary of findings using the comparative model**

	Net assessment	Schwartz	MDOS
<b>Vision</b>			
Broad Vision	-Informed by U.S. broad vision to define competitors within long-term competition framework.	-Could be. -Can apply at broad vision level to identify future challenge areas for the broad vision.	-Most formal links. Tries to refine initial understanding of "better" by using taxonomy to classify intensity.
Specific Vision	-Well defined problem, highlights asymmetries -Points a strategist toward what to address not how to address it	-Can create, or be applied to existing, specific vision	-Yes. Broad and specific understanding of the problem. Strategic approach.
-Holistic	-Yes across all sources of power -Includes organizational logic and key personalities	-Yes, both in terms of the sources of power it considers and in its research base	-Yes, IOP effects considered cumulatively

<sup>6</sup> Andrew F. Krepinevich and Barry D. Watts, *The Last Warrior: Andrew Marshall and the Shaping of Modern American Defense Strategy*, First edition (New York: Basic Books, 2014), 247.

<sup>7</sup> Peter Schwartz's works on these topics include: *The Long Boom: A Vision for the Coming Age of Prosperity* (Perseus, 1999), *Inevitable Surprises: Thinking Ahead in a Time of Turbulence* (Gotham Books, 2003), *China's Futures: Scenarios for the World's Fastest Growing Economy, Ecology, and Society* (Jossey-Bass, 2000), and numerous articles.

-Predictive	Yes, in the respect that it makes projections based on trends and infers asymmetries that might develop from those trends	-No. Perceives “possible” futures and prepares leaders to make critical decisions within those contexts	-Yes. Predicts cumulative effects within a conflict’s context, considered against known and projected shocks and trends
<b>Time</b>			
Time horizon	10 years	10-25years, tailored to the critical decision/issue under analysis	20 years
Duration of Viability		-Insights into sub-components but no codification. -Possibilities for strategy-derailers within each scenario	
-Time to achieve	~10 years – support current decisions to enable future advantage		-Considered both for strategic imperatives and cumulatively for the vision
-Time remain viable	Not defined		-Considers things that will force strategy to change if not mitigated beforehand to maintain the 20yr vision
<b>Process</b>			
Problem ID	Methodology diagnoses all sides of the problem		
-Focus on critical problem?	-Yes, continually refined based on “asking the right questions.” -Asymmetries, of advantage or disadvantage -Symmetrical comparison of competitors	-Yes. Self-reflection and reflection on leaders’ environment and concerns -Individually articulate perceived problem allows many lenses throughout the team -Move between broad and narrow questions to identify critical implications and refine decision/issue	-Problem identified between desired end states (fr and en) and US desire and current environment. -Problem refined based on solvable problem sets that offer 20yrs of advantage
-How are subjective value judgements made?	-Asymmetries, advantages, emerging problems based on “line of argument” -Uses dispassionate balance evaluation to answer complex or ill-defined questions with value judgements	-Separating cognitive biases and individual frames through individual and group reflection -Tensions and implications identified via broad and narrow questions	-Comprehensive analysis of environments. Analyze trends and known future events. Make inferences and assumptions.
Solution-Oriented	-No. Provides non-authoritative options.	-No. Focused on informing decisions in the context of their possible future impacts, prepared for future decisions.	-Yes, seeks to create strategic effects that improve problem set conditions toward “better”
-Method translate problem into solution	-Asymmetries and possibilities to capitalize on or mitigate them -Requires decision or policy makers to develop strategy to enact	-No mechanism to turn scenario outputs into strategy -Within context, rehearsing multiple futures shows how current decisions will impact future and future	-Strategic decisions/effects within a strategic approach (cognitive map). Strategic response options.

		decisions...supports continuance	
-How solutions defined?	-Asymmetries, uncertainties, emerging problem areas, key opportunities -Solution = ID critical elements that contribute to insightful and effective strategy	Solution = informed decisions	-Improved U.S. position within the problem set over an extended period of time
-Balance between knowns and predictions	-Disavows predictions. Makes inferences based on trends and detached balance comparison and	-Preference to facts and trends. Does not designate "most likely" future scenario	-Within context, predictions are based on trends and known future events
Integration			
-IOP integrated or coordinated?	-Holistic approach to balances and asymmetries -Can translate into integrated strategy, impetus on strategist	-Integrated – consider and conceptualize the "whole picture" surrounding an issue. -While the picture is holistic, there is no way to extrapolate if that would transfer into integrated strategy.	-Yes, looks for cumulative effects across IOP along a strategic line of engagement to support the strategic focus
-Who is design team?	~12 people with a wide variety of backgrounds and experiences <i>-Given distance from strategy-making, team not empowered to make lasting decisions</i>	-Initial group, scenario working groups, workshops/workers. -Wide variety of expertise, seeks outsiders, all levels within an organization -Information flow formalized in the process.	-Represent whole of government and partners, intel, etc -Wide range of expertise -Interface with agency planners
Iteration			
-Problem-solution conversation?	-Continuous search for right question – questioning assumptions and adapting assessment accordingly, wargames and scenarios -Supervisor intervention -Questioning metrics and assessment's frame	-Interaction between initial issue and line of questioning, the scenarios/implications, and diverse feedback	-Natural discourse between understanding the environment, problem sets, and the strategic approach
-How incorporate external forces (decision, monitoring)	-Target audience (SecDef in this case) feedback sought and incorporated. Distro extremely limited.	-Leading indicators as monitoring mechanisms	-Formal brief-backs -Strategic imperatives and inflection points provide mechanisms to monitor progress and preparation for inflection points. -Preparing to be unprepared for an inflection point.
Level of prescription	Diagnostic, not prescriptive	Anticipatory, not prescriptive	-Prescriptive but balanced to allow individual IOP detailed planning and freedom of action
-How are milestones used?	-No milestones or road map	-Implications in a scenario are considered to inform current decision and prepare for	-Critical actions and decisions required to achieve advantage

		future decision.	-Must leave room for organizations to maneuver and capitalize on emergent opportunity guided by strategic focus/vision -No “how” assigned to strategic imperatives
-How is “what must be done” defined?	-Asymmetries, opportunities, emerging challenges are “what could be done” -Informed choices for strategists and policy makers	-Does not define what must be done. Considers, and prepares for, what could happen in terms of decision-making	-Milestones -Moving the ball toward the strategic focus
<b>Communication and Collaboration</b>	Few links outside of the assessment office/team (supervision, the assessments immediate audience are the exceptions)	-Stories -Decisions refined...future decisions considered	
-Prescriptive products	-None	-None	-Strategic approach -SROs
-Feedback and decisional products	-The assessment (decision support for strategists and policy makers) -Internal review process for balances -Wargames and scenarios (multiple participants) support collaboration and feedback	-Working group/workshop dynamics facilitate iterative inputs, feedback, and insights	-Strategic approach, problem sets, band of tolerance -Wide array of collaborative products including the above and environment descriptions
-Lexicon	-Uses established lexicon for the context of the assessment -No unique lexicon	-Some specific lexicon for scenario components but otherwise uses and communicates with plain or industry-specific language.	-Extensive lexicon required to navigate the methodology but attempts to use existing terminology where possible
<b>Risk Assessment</b>			
- How is risk assessed?	-Uncertainties within the assessment, disadvantageous asymmetries, emerging threats	-Risk to success & uncertainty	-Inflection points -Specific assessment within SROs
-How is risk mitigated?	-counterbalancing asymmetries -Final mitigation falls on strategist applying the assessment	-Build scenarios around greatest risk (considering both categories) -Leaders conceptualize their decisions and consequences within a high-risk scenario -Indicators highlight which risks might be approaching as the future plays out	-Imperatives and decisions intended to prepare for an inflection point

Source: Author's original work

## **Conclusions**

The MDOS SDM is the most complete strategic design methodology of the three I analyzed, providing the best opportunity to create integrated strategy in the twenty-first century security context of complexity and uncertainty. Beyond the direct indicators that the comparative model looks for, the MDOS SDM adds layers of nuance, reinforcing its ability to both define a specific vision and guide broad actions toward a better peace. For example, its use of taxonomy to classify the intensity of national interests threatened in a competition and mapping the potential changes to that intensity based on the vision and response options provides strategists and decision-makers a defined link between national interests and outcomes, and an increased ability to prioritize actions and resources across competitions.

Another significant but subtle nuance is the methodology's use of both a strategic end state and strategic focus in creating a strategic approach. The end state defines what the problem looks like when solved and the strategic focus identifies a critical element or condition that enables the solution; thus, providing a solid basis for subsequent planning. The MDOS SDM also leaves a wide berth for strategists to incorporate other strategy mechanisms, like scenarios, narratives, and net assessment, throughout the process.

The only thematic weakness in the MDOS SDM is that it relies on accurate data and analysis, which is a common theme across all the methodologies and is unavoidable in developing strategy. Another weakness is the MDOS SDM complexity; it is not a methodology the strategists can master in a two-day training course. It requires an extensive introductory course, practice, and experience to implement effectively.

While net assessment and scenarios and strategic conversations do not possess the mechanisms to produce a strategic design, they each offer capabilities that are critical in developing an effective strategy or strategic design. Net assessment's methodology provides a framework and insights into diagnosing a problem's core and to identify and conceptualize asymmetries and exploitations. Even the broad idea of conducting balance assessments to identify asymmetries and opportunities is valuable. Scenarios and strategic conversations are valuable decision-support tools that afford leaders the opportunity to support their strategy's continuance with informed decisions. The wide audiences for strategic conversations offer a framework for continuous strategy-review.

## Implications

While my research's conclusion is straight forward, several implications emerge for successful implementation of strategic design as a U.S. government process. First, strategy and strategic design must not be "fire and forget." Even the best design requires regular evaluation to remain relevant. Strategists must continuously question a design's assumptions and must be prepared to adjust the design to achieve "continuing advantage" as a competition progresses.<sup>8</sup> This further implies that the design group must persist, at least informally, after they complete an initial design.

Second, if the U.S. government chooses to implement any of the methodologies that I have analyzed, it must highly prioritize generating and sharing good data with the design team; all three methodologies rely on vast amounts of accurate data from myriad sources. The consequences for not providing accurate and robust data to a strategic design team are ill-informed strategy, perhaps even strategy in a harmful direction. This seems as undesirable as the absence of a strategy. Further, the U.S. government will have to overcome classification challenges associated with sharing information inter-agency, as well as developing new trusted agents to produce and vet unclassified data.

Third, senior leadership must empower its strategic design teams with the authority to make subjective value judgments within the design and provide feedback mechanisms to gain timely concurrence on those judgments from senior leaders. As I discussed, developing an effective strategic design demands that strategists prioritize which challenges they address, and which they do not. The authority to make value judgments allows strategists to conserve resources, while ensuring that the U.S. maintains advantage in its most significant challenges.

Fourth, while the MDOS SDM is the most complete design methodology of those I compared, the other two methodologies offer tools that would enhance the U.S. government's ability to develop and execute the type of strategy I have discussed. In fact, combining the net assessment and scenario methodologies with existing strategy-making processes could create sufficient means to develop holistic, integrated strategy. A detailed methodology, such as the MDOS SDM, would be difficult for the U.S. government to implement, and may not carry favor between presidential administrations

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<sup>8</sup> Dolman, *Pure Strategy*, 6.

because of the methodology's specificity and prescriptiveness. Combining net assessment and scenarios might provide an approachable solution that produces informed strategy without being so prescriptive as to threaten an administration.

In closing, strategic design offers a viable solution for the U.S. government to develop and implement integrated, creative strategies that create the conditions for better peace in the complex and uncertain competitions emerging in the twenty-first century. Of the methodologies I analyzed, the MDOS SDM is the most complete method for achieving viable strategic designs. This methodology is not easy to implement, given its complexity, and may be unattractive to some presidential administrations because of its prescriptive nature. However, the MDOS SDM provides sufficient mechanism to absorb shocks, even internally created shocks, that it can transcend the U.S. political cycle the ebbs and flows between administrations. It is a feasible solution to navigating complexity and uncertainty.

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